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PSYCHOSOMATIC FACTORS IN CUTANEOUS DISEASE

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IN recent years increasing attention has been given to the psychosomatic factors in skin disease. Many papers about them have been published (e.g., O'Donovan 1927, Stokes 1935, Klauder 1936, Klaber and Wittkower 1939, Rogerson 1939, Stokes and Beerman 1940, Hodgson 1941, Hellier 1944), and even textbooks and handbooks show growing awareness of their importance (e.g., Becker and Obermeyer 1940, Stokes et al. 1942).

In some quarters the whole subject is anathema; in others so much stress is laid on the psychological factor that the importance of the somatic component is forgotten. Therefore one must emphasise that the physician who fails to realise that an individual is composed of both psyche and soma—mind and body—and does not pay at least as much attention to the latter as he does to the former, is in danger of falling as grossly into error as his colleague who disregards the mental factor entirely.

In practice, however, the matter is not so easy as these statements may suggest. The dermatologist is usually averse from meddling in another branch of medicine, and the psychologist is often handicapped by a scanty knowledge of dermatology. There seems to be but little common ground in their approach to cutaneous disease. Is it possible to suggest a simple scheme of linkage so that when, for example, the psychologist says "I find that this patient is a tense, restless, conscientious man, preoccupied with matters of cleanliness, order and routine," the dermatologist can assert with reasonable accuracy "Then if he develops a skin eruption, he will be prone to certain cutaneous disorders—viz., W, X, Y and perhaps Z."

Possibly to make such an attempt at the present time is to allow vaunting ambition to o'erleap itself, but the following views may be thought worthy of consideration.

Intelligence and Personality

With certain obvious qualifications, the British Army at present may be regarded as a cross-section of the community of the United Kingdom; and therefore findings with regard to intelligence in the Army are in the main applicable to the community as a whole.

Since 1940, the intelligence of all men entering the service has been investigated by means of Raven's progressive matrices, and six so-called "selection grades" are recognised. In this method of assessment those of the highest intelligence are placed in selection grade 1 while the lowest intelligences are in selection grade 5. When the personnel are thus classified, the distribution in each selection group, stated in "round figures" as a percentage of the whole, is as follows:—

Selection grade	%	*Selection grade*	%
1	10	3−	20
2	20	4	20
3+	20	5	10

It will be noted that in this assessment, from which lunatics and mental defectives are excluded, 40% of the personnel fall within the category SG 3 which therefore is subdivided into two portions. Detailed information on the evaluation of these tests will be found in standard works on psychological testing such as *The Measurement of Abilities* by Vernon (1940).

Psychological Types

The following argument, which was first suggested to me by G. A. Hodgson in 1943, gives an easily remembered and practical exposition of the influences of psychological trends in the ætiology of cutaneous diseases.

PERSONALITIES WITH HYSTERICAL FEATURES

A hysterical person is one who openly—or without himself recognising it—makes use of illness as a method of obtaining sympathy or privileges, usually by emotional blackmail or social manipulation. He may or may not possess obvious histrionic ability. Since the days of Charcot it has been widely accepted that hysterical persons are prone to develop areas of partial or complete local anæsthesia and may mutilate themselves with injuries that may be apparently purposeful or apparently purposeless in type. With obvious reservations therefore, it can be postulated that if a hysterical patient develops a skin eruption, there will be a reasonable likelihood that that eruption may be self-inflicted.

Besides the hysterical type, what other types of personality are fairly common and easily recognisable? For present purposes, it can be said that there are three which are of predominant interest to the dermatologist—viz., personalities with obsessional features; personalities with severe anxiety, open or concealed; and personalities with narcissistic features.

PERSONALITIES WITH OBSESSIONAL FEATURES

The obsessional man is usually highly intelligent. He is tense, restless, over-conscientious, and preoccupied with cleanliness, order and routine, and in his own words "likes to have matters arranged 'just so.'" He may be obsessed with the importance of his work, his mission or his beliefs. Often he drives himself relentlessly to achieve the highest and most difficult aims to which his keen and competent mind aspires. He is prone to compulsion neuroses. If such an individual develops a skin eruption he tends to develop localised or general pruriginous eruptions which frequently are lichenified. Neurodermatitis (lichenification), pruritus ani and diffuse simple prurigo are the types of eruption to which he is prone, while the hazard of dermatitis medicamentosa is one that he seldom escapes.

Many medical men are obsessional types and every dermatologist has treated colleagues who have the characteristics of the breed. An intelligent obsessional patient who develops scabies usually "is driven mad with the itching." His disease becomes an obsession, he never forgets it. At times he excoriates himself madly: invariably he overtreats himself, applying first benzyl benzoate emulsion in conformity with modern doctrine, and then, because he still continues to itch, plastering himself with sulphur ointment. If his complaint is merely scabies, usually with firm handling he is soon cured. Suppose that it is not scabies: suppose that because of some slight local infection, or some deeply rooted "complex," he becomes obsessed with his anal sensations: then unless he is handled very carefully, he will easily retrogress into the condition of the chronic case of pruritus ani, than which few diseases are more intractable.

PERSONALITIES WITH SEVERE ANXIETY, OPEN OR CONCEALED

The morbid mental perturbation, agitation and distress of these patients is well recognised, but often they mask their psychological symptoms so that only the astute observer recognises at an early stage of therapy that the patient is in fact troubled by an anxiety neurosis.

Rosacea is the classical example of the eruption to which anxiety types are prone; but it should be noted that Klaber and Wittkower (1939), who first drew attention to the psychosomatic factors in this disease, postulated that a pathological change (loss of contractile power) in the small blood-vessels of the face was necessary for the establishment of the eruption. Thus they emphasised the oft-forgotten fact—stressed at the commencement of this paper—that the psychological is but one factor in the ætiology of this, as of many other diseases. In Klaber and Wittkower's series of cases 72% of the patients had abnormal degrees of social anxieties, 40% had long preceding social or sexual stress and 26% had suffered acute psychological trauma immediately before the rosacea developed. In the opinion of these authors, the predominant factors in the psychodynamics of rosacea are an abnormally high level of self-esteem, and life-situations that lead to the production or activation of guilt. "The quality which distinguishes this particular group is their frank and conscious preoccupation with feelings of guilt and shame."

Pompholyx, either of the hands or feet, is common at the present time. Certain cases are due to fungoid infection of the skin, others have evident causes. But there are cases for which no concrete cause can be

found. In these the man may be indicating by a psychological mechanism that he cannot use his hands or feet: if he is a soldier, despite the protests of his conscious mind, he may be dumbly stating the violent belief of his subconscious "My feet must not be used to carry me away from my family and into danger" or "My hands must not be available to do this fearful work." Often by reassurance and suggestion such a case can be patched up; but he is leaning too heavily on the dermatologist or—if the transference is successfully effected—on the unit medical officer. Fundamentally he is an unreliable man and will crack when his unit goes under strain. Units liable to battle service should not be burdened with this type of case; units employed in lines of communication, or preferably at the base, may perhaps be able to carry him.

Besides rosacea and pompholyx, dysidrosis may be a manifestation of unspecific forms of anxiety: that is so well recognised that the colloquial phrase "to sweat with terror" is recognised by most writers as a cliché. It is less well appreciated that chronic dysidrosis is often the result of chronic states of anxiety.

Our colleagues in France have for long recognised that the condition they have named *acnée excoriée des jeunes filles* is largely due to the psychological trends of the affected person in which anxiety may predominate.

There is some little evidence—possibly more a traditional belief than an accepted fact—that lichen planus may be associated with anxiety, with mental worry and with overstrain. Behind the efflorescence of a diffuse seborrhœic dermatitis there may lurk an acute anxiety or a difficult obsession.

Exacerbations of psoriasis may also perhaps be associated with the cumulative effect of a dominating anxiety. It is often stated that "alcohol is bad for psoriasis." The late W. E. Dixon used to teach that the man who takes to drink or drugs usually does not do so through pure viciousness. The patient has usually serious emotional problems and to him the friction of life and the hostility of others causes much more disquiet than to the average person: with the help of a little alcohol or phenobarbitone or cocaine, life becomes much more bearable. So in the case of the man who has a tendency to psoriasis: life becomes difficult and he turns to alcohol for assuagement. Simultaneously the psoriasis effloresces; the physician may blame the alcohol for the efflorescence, but probably he should blame the mental trauma for the exacerbation of the eruption and for the craving for alcohol.

One may here note in parentheses the similarity that may exist between alcoholism and rosacea—although, despite traditional belief, most rosacea cases prefer caffeine to alcohol. Usually—and particularly if they are women—they are heavy tea-drinkers.

PERSONALITIES WITH NARCISSISTIC CHARACTERISTICS

For present purposes, a narcissist may be defined as a person who is self-centred and self-absorbed to a pathological degree; he is unable to outgrow the phase of primitive self-absorption of the infant and to develop a mature capacity for warm human relations. The narcissist has deep convictions of inadequacy. It is noteworthy that usually he is possessed of some infantile physical features, of which an unwrinkled facial skin and an unlined brow are characteristic.

Recently Major E. Miller (1944) has drawn attention to the phenomenon of conceit and narcissism as a factor in the production of dermatoses. The suggested mechanism in some cases is as follows:

The patient tends to be of the conceited type, with an apparent ease of social manner and a facility for making personal contacts. He wears a uniform like a popinjay, as an outward symbol of his awe-inspiring personality. Then, under Service discipline, he slowly or quickly learns that a uniform is designed for much more than personal adornment: a battledress is a dress for battle, and to train for battle a high standard of personal efficiency and knowledge is required. He finds that he is being outstripped in learning by his companions: he begins to feel inadequate: deep down within him he may realise that for all his bravado, battle, woundings and sudden death are more than he can face. His feeling of inadequacy changes to a feeling of guilt, for he knows that sooner or later he will inevitably let down his comrades: he, who posed as the tough soldier, the envied of the unit and the idol of the womenfolk, will fail—and will be debunked and shamed before his fellow men and women.

Now throughout the years of his pride, his personal appearance was the focus of his self-esteem, and because he has concentrated on the importance of his physical beauty, it is his skin that nature selects as the tissue in which the visible signs of the deep mental conflict became manifest; the debunked narcissist solves his mental turmoil and escapes from an insupportable position by means of a skin eruption, which is usually of an exudative type: an eruption which will be singularly resistant to treatment, and prone to relapse unless he can be posted to some unit where his personal safety is ensured and full play can be given to his narcissistic tendencies, or else returned to civilian life where he can cover his inadequacies by boasting of deeds of which—in the event—he never would have been capable.

Hazards of Low Intelligence

So far we have chiefly discussed the influence of certain neurotic trends of personality. In order to develop the argument the issues have been simplified to a degree which is seldom found in practice, and no notice has been taken of the fact that certain neurotic trends overlap; for example an obsessional type of person may be very prone to anxiety neurosis. This matter cannot at the present time be further pursued; instead let us turn to a consideration of the men and women who, we will assume, have no neuroses but who are of low intelligence and have been placed in selection groups 4 and 5.

It has been shown by Hodgson (1941), Winner (1943), Rollin (1943), Hargreaves and MacKenna (1943) that a positive significant relationship does exist between infestations (with *Pediculus humanus and Sarcoptes scabiei*) and subnormal intelligence. This view has been disputed by Mellanby et al. (1942). Nevertheless, though none would say that a person of low mentality has a constitutional hypersusceptibility to ectodermal parasites, such a person runs more risk of contracting infestations than most people because he is less fastidious than others about his associates and also about his standards of personal cleanliness. Also, when he has contracted scabies, the subjective symptoms do not cause him the same degree of mental discomfort as they would cause an individual of superior intelligence, and the disease is therefore well established before he comes for treatment. Often it is the pain of septic lesions which have arisen as secondary complications which drive him to seek advice. Usually he does not coöperate satisfactorily in treatment. For these and other reasons one expects and finds a higher incidence of scabies and pediculosis among persons of low selection gradings—and one finds that these diseases tend to be more severe, more complicated by sepsis and more prone to relapse in these cases than when infestations are encountered in persons of greater mental ability.

The relations of intelligence and personality to types of skin lesion are set out in the accompanying table.

INTELLIGENCE AND PERSONALITY IN RELATION TO SKIN LESIONS

Low intelligence*	Hysterical features	Narcissistic features	Gross states of anxiety	Obsessional trends
Infestations	Self-inflicted lesions.	Exudative dermatoses	Excoriated acne. Hyperidrosis. Pompholyx. Rosacea.	Lichenification. Prurigo simplex. Pruritus ani. Pruritus vulvæ.
Sepsis.				

* i.e., low inborn capacity to learn.

Practical Applications

There are many obvious ways in which these psychosomatic concepts can be applied.

Firstly, persons of low intelligence should be medically supervised with much greater stringency than the average. From the military standpoint, health inspections should be more frequent and more carefully performed in units in which such backward types predominate. In typhus areas, because body-lice are the vectors of typhus, men of low selection gradings

must be carefully watched. Persons of low intelligence do not coöperate satisfactorily in treatment. It is useless, wasteful and perhaps dangerous to leave men of such a type to carry out their own treatment without supervision. A corollary is that because of this lack of coöperation, orderlies dealing with scabies patients should be carefully selected for their efficiency.

It has been suggested that in skin wards it would be a good thing to mix the scabies, ecthyma and sycosis cases with the more mentally alert cases of eczema, prurigo, psoriasis, &c., so that the brighter men might assist the dull ones. But in practice this does not work. The bright intellectuals are afraid of contracting an infective dermatitis or an infestation, while the duller men prefer to keep to themselves in order to preserve the integrity of their egos and thus to prevent feelings of inferiority.

In prescribing treatment for patients it is well to attempt to assess their aptitude, ability and willingness to conform with one's instructions. The obsessional patient, for example, is a ritualist. He likes to perform a precise and elaborate ceremonial of cleaning with oils, bathing with lotions, anointing with unguents and covering with bandages. He will over-elaborate every treatment prescribed, and may tend to add a few surprising rituals and applications to the prescribed regime. He requires to be carefully watched lest he develops dermatitis medicamentosa.

Patients with covert anxiety benefit from reassurance to a great degree. It helps them greatly to see a doctor each day—to discuss their case, their problems, their worries. A vigorous, hearty and strengthening approach assists them enormously. The cloud of their anxiety lifts while one talks to them and then—after one has gone—slowly descends like a thick fog, the promise of next day's visit being the beacon of hope for them in a black world.

There are certain trends which patients suffering from skin diseases show, and their anxieties and troubles in these respects can be alleviated by a careful approach. For example, adults suffering from impetigo, from seborrhœic dermatitis and sometimes from herpes zoster and acute eczema, are prone to develop a leper complex. They feel that they are unclean and that—rightly—men should shrink from them. These cases may be much helped by reassurance, but from the point of view of the therapist it is well to remember that persons with a leper complex tend to overtreat themselves; for example, unless warned not to do so, they will bathe their lesions frequently in warm solutions of antiseptics, and wash their sores and their persons vigorously with antiseptic soaps before applying the remedies which have been ordered. This is one reason for failure of therapy which, unless recognised, may baffle the practitioner.

Chronic psoriasis is often linked with deep repressed emotional factors and the intractability and chronicity of the eruption seems in many cases to depend on the psychological state of the patient. Many feel that when others see their lesions they think that they are syphilitic and unclean. In the Services the life of these men has often been made tolerable by the reassurance of the unit medical officer who has told their immediate companions that the patient's condition is not contagious and not due to his fault, and that he is not to be treated like a leper. If the companions respond to these suggestions, the psoriasis case may lose much of his anxiety and his eruption then usually improves.

Psychiatrists have drawn attention to a technique of case-taking which is of considerable importance to those interested in the practical application of psychological theories to dermatological practice. Briefly the technique consists in taking a carefully dated clinical history from the patient, and then, after a short interval, taking a carefully dated personal life-history, dealing with phases of emotional and social difficulty, successes and failures. The histories are compared, and interesting correlations can often then be detached. By this technique one can uncover emotional situations that have occurred in the patient's life which may have precipitated physiological disturbances and illnesses. The remarkable failure of patients to associate phases of continual strain with phases of illness is not the result of lapse of memory but is a process of active forgetting which in itself is of deep psychological importance.

SUMMARY

Psychosomatic factors in relation to cutaneous diseases are discussed; it is emphasised that these as well as somatic factors should be considered in the evaluation of cutaneous diseases.

A scheme is suggested, based on Hodgson's original observations, whereby certain mental trends can be linked with a proneness to certain types of skin diseases.

The facts uncovered in the course of investigation can be used practically in devising treatment.

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SMALLPOX IN THE MIDDLE EAST

LESSONS FROM 100 CASES

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DURING 1943 and 1944 there was a large epidemic of smallpox among the civilian population in Egypt and this resulted in a considerable incidence of the disease among Allied troops stationed there. Since the accepted descriptions of smallpox differ in so many essential respects from our experience, we have thought it important to describe in some detail 100 consecutive cases seen by us in a military hospital.

MATERIAL STUDIED

Of the 100 cases, 95 were military personnel between the ages of 20 and 40. The remaining 5 consisted of 4 adult civilians and 1 baby. All the cases were drawn from the area served by this hospital—an area in which intimate contact with the civilian population was inevitable. Cases occurred in white and coloured troops alike from nearly every nation comprising the Allied Forces in the Middle East. The monthly incidence was as follows.

Month	*Cases*	*Month*	*Cases*
May 1943	10	Nov. 1943	2
June „	10	Dec. „	7
July „	3	Jan. 1944	13
Aug. „	2	Feb. „	18
Sept. „	2	March „	57
Oct. „	1	April „	19

Some of these cases are not included in our series because although they occurred in the same area they were evacuated direct to an outlying isolation hospital without passing through this centre. Six cases were admitted in the pre-eruptive stage and developed smallpox in general medical wards, but thanks to prophylactic vaccination there was only one secondary case.

The cases were of all degrees of severity—54 were of the mild, so-called modified type, in which the rash matured rapidly; 24 were considered to be unmodified, the rash running a normal course; 14 of these were classed as mild and 10 as severe with danger to life; 22 showed hæmorrhagic manifestations and of these 17 were severe.

INVASIVE STAGE

The early symptoms in our cases were entirely non-specific, being similar to those of other acute febrile disorders, such as sandfly fever, malaria, poliomyelitis or enteric fever. Six were admitted to general medical wards as sandfly fever. The symptoms were headache, often severe, with pain behind the eyes, general aches

and pains in the arms and legs, shivering, loss of appetite and occasionally vomiting. Backache, said to be a diagnostic feature of smallpox, was not prominent, and if present was no worse than in many other febrile disorders encountered in the Middle East.

Days of prodromal fever	Cases	Days of prodromal fever	Cases
1	18	5	4
2	11	6	2
3	30	No record available ..	8
4	27		

Most of our cases had prodromal fever for 3 or 4 days before the appearance of a rash, but this was by no means invariable. In 29 cases the prodromal fever lasted less than 3 days, in 18 less than 2 days and in 7 cases the specific rash, in no case a prodromal one, developed on the same day as the fever. Two of these 7 cases died with the severe hæmorrhagic type; one of the 2 was in this hospital for another complaint at the time of onset and we saw the rash begin within 12 hours of the first rise of temperature and develop as a typical smallpox eruption. But most of the other cases with a short prodromal fever were of the modified variety. In 8 cases, usually owing to language difficulties, no accurate estimate of the length of prodromal fever was possible.

Prodromal rashes, which we define as rashes which appear before and disappear with the development of the specific rash, were seen in only 5 cases. The rash was scarlatiniform in one and morbilliform in 4; of the latter, 2 were generalised, 1 localised to the shoulders and 1 to the abdomen. Prodromal petechial rashes were not seen, though petechiæ as the sole hæmorrhagic manifestation of the specific rash were present in 5 cases described below.

SPECIFIC RASH

Non-hæmorrhagic cases.—In all the 78 cases of this type, the specific rash appeared first on the face and trunk (and especially on the back) and never on the extremities. In the earliest stage, therefore, all had the same distribution as chickenpox, and it was only as the disease progressed that more and more spots appeared on the extremities, first on the arms and then on the legs, until at the end of 4 or 5 days the final distribution of the rash was manifest. But in the mildest cases no new lesions appeared after 24–48 hours had elapsed from the first appearance of the spots, so that the rash never developed properly on the extremities and the rash throughout exactly resembled chickenpox. In all these cases two facts were outstanding—that usually there were more lesions on the trunk and face than on the extremities, never the opposite; and that there was never a significantly greater number of lesions below the elbow and knee than above them, the distribution in these areas being equal. The adjective centrifugal applied to the rash was therefore meaningless.

It is well known that the distribution of the rash is modified by previous skin irritation, and this was clearly shown in 2 patients, one of whom had a confluent rash where he was sunburnt and a very sparse vesicular eruption on the unexposed bathing-drawers area. In the other case an infected epidermophytosis of one foot determined a well-marked concentration of smallpox lesions around the infected area.

The modified cases almost always presented with a vesicular rash and practically never with a papular one. The lesions developed very rapidly and the vesicles were often fully mature in 48 hours. Thereafter they either aborted completely or quickly became pustules which had dried to form scabs within a further 2–3 days. Owing to the fact that new lesions continued to appear for 4–5 days "cropping" was simulated in many of the cases. This modified rash in its character, distribution and course was often clinically indistinguishable from that of chickenpox. In nearly all the cases hard shotty lesions, which were often better felt than seen, developed on the palms and soles at an early stage. Though not diagnostic we considered these lesions very suggestive of smallpox. Vesicles on the palate and on the conjunctival mucous membrane were common even in the mildest cases.

A small local outbreak among coloured troops well illustrated some of the features mentioned above. A Jamaican was admitted with a very sparse vesicular rash of about 20 or 30 spots, none of them on the palms or soles, preceded by 3 days of prodromal fever. The rash never developed fully and the distribution remained that of chickenpox. Because of the prodromal fever he was isolated in a smallpox observation tent. Twelve days later 2 more Jamaicans from the same hut in his unit were admitted, each with a still more sparse vesicular rash which had appeared after 1–2 days fever. They remained clinically indistinguishable from chickenpox, but the elementary bodies of smallpox were found in scrapings from their lesions (see below). Two days later 3 more cases were admitted, again from the same hut, 2 with typical mild smallpox and 1 with a rash exactly resembling chickenpox. Finally, after a further 12 days, 3 more cases were admitted from the same hut, all with typical mild smallpox, one with the classic period of prodromal fever, the other 2 with fever for only a day. Four of these 9 cases remained clinically indistinguishable from chickenpox throughout their course, but 2 of them had the typical 3-day prodromal fever, all came from the same hut in the same unit and in 6 the elementary bodies of smallpox were recovered from their vesicles.

The unmodified cases presented with either a papular or early vesicular rash. Some of them on the first day or two closely resembled chickenpox on account of the early distribution, but when the rash was fully developed the diagnosis was obvious. The rash in this group developed at the normal rate, the pustular stage being reached in 5–6 days. The more severe the case the slower was the maturation and the greater the tendency for the innumerable spots to become confluent. Rarely a case which was judged to be severe from the initial density of the eruption proved quite mild, nearly all the lesions aborting from the early vesicular stage. Lesions on the palate, conjunctiva and glans penis were almost invariable in these cases and caused much discomfort. The troublesome cough and sore throat which were usually present were attributed to lesions in the larynx and trachea and on the pharynx. These unmodified cases ran a long course chiefly due to the time required for the last scabs to separate from the feet. Pitting was rarely observed and was confined to those patients who had had confluent rashes.

Splenomegaly was noted in about half of these 78 cases and in a few a generalised lymph-node enlargement was present. All except 3 or 4 of the patients had a high temperature on the first day of the rash. In the mild cases, whether modified or not, this settled to normal quickly, whereas in the severe cases lysis was gradual and there was secondary fever during pustulation.

Of the modified cases none died, while in the unmodified cases there were 2 deaths, one an adult and the other a baby, both with confluent rashes.

Hæmorrhagic cases.—This group consisted of 17 cases with gross hæmorrhagic lesions and of 5 in which numerous petechiæ in the groins and axillæ were the only hæmorrhagic manifestations. The former all presented with a maculopapular rash and never with a vesicular one. As in the non-hæmorrhagic cases, the rash developed first on the face and trunk, and the distribution, if the patient lived long enough for development to be completed, was similar in the two groups. Chickenpox, however, was never simulated. "Measles" was the diagnosis of most cases on admission, though 2 of the series were sent to hospital with the diagnosis of scarlet fever, on account of the so-called lobster rash, the rash *ast-acoïde* of the French authors. They had a diffuse bright red erysipelatoid swelling of the skin, which was tense, hot and painful. Six of our cases had this type of rash; in 3 it was confined to the face while in the others it was generalised. We have not called it a prodromal rash, because it continued to increase up to the time of death, pari passu with the development of the papules, which usually however were few and failed to mature.

One of these cases died on the 5th day of illness without developing a single papule: he developed the lobster rash on the 3rd day of high temperature and was at first mistaken for hypertoxic scarlet fever. Gross hæmorrhages into the skin and from mucous surfaces soon appeared, associated with a remarkable condition of the hands and feet. At first these were merely involved in the generalised intense

erythema and associated brawny œdema, but later the skin of the palmar surface of the finger tips and of the plantar surface of the toes and feet became a greyish-white parchment-like colour with a clear-cut line of demarcation from the intensely inflamed adjacent skin of the feet. These areas looked gangrenous but were not anæsthetic. It was impossible to feel pulsation in either dorsalis pedis artery, though pulsation in the posterior tibial arteries was present. The cause of these phenomena was not apparent, but they have been described before (Wilkinson [1]). It is considered possible that they represented true cutaneous gangrene from strangulation of the blood-supply by the intense œdema.

The cases without the lobster rash all showed dark red macules and papules surrounded by an angry looking crimson halo, in striking contrast to the pink papules in the non-hæmorrhagic cases. It was unusual for more than a few of the papules to vesiculate. The first hæmorrhagic manifestations were cutaneous in all but 2 cases, which began with hæmaturia, and appeared between the 1st and 4th day from the beginning of the rash, in most cases on the 1st or 2nd. In 4 cases the hæmorrhages were confined to the vesicles and in these the normal maturation of the lesions was more apparent (variola hæmorrhagica pustulosa). In the other 13 cases cutaneous purpura was widespread from the start and quite independent of the papules (purpura variolosa). Bleeding from mucous surfaces very soon followed the cutaneous hæmorrhages. Palatal and conjunctival hæmorrhages were universal, and hæmoptysis and hæmaturia, more or less severe, were common. Seven cases had naked-eye hæmaturia. Melæna was present in 2. The very sudden death in one case with diffuse hæmorrhages suggested a cerebral hæmorrhage, but no autopsy was held and this could not be confirmed.

Specific lesions in the mouth were characteristic of the hæmorrhagic cases, and were important in diagnosis. In 6 cases very small grey-white specks were found in the buccal mucosa closely resembling Koplik's spots, but slightly larger and not on a red base. Within 12–24 hours they spread to the gums and palate, and in 24–48 hours had coalesced to form a very characteristic white slough entirely covering the palate and in some cases the tongue. In 5 more cases this white slough was present on admission, and in one East African was of great value in diagnosis since it was difficult to observe the characters of the rash on his black skin. All except 2 of the cases exhibiting these mouth lesions died. The lesions were quite distinct from the ordinary vesicles on the palate seen in the less severe cases.

In 5 of the cases numerous petechiæ in the groins and axillæ, appearing first at the end of the prodromal fever and simultaneously with specific macules, were the only hæmorrhagic manifestation.

In all 17 of the true hæmorrhagic cases constitutional symptoms were very severe and life was endangered from the start. In the 4 cases in which the hæmorrhages were confined to the vesicles, there was some semblance of the usual fall in temperature with the development of the rash. In most of the others the temperature was high throughout, though in 4 it was normal for the last 3 days of life, with a rising pulse-rate. Death occurred in 12 of these cases between the 5th and 12th days of the disease, mostly between the 8th and 9th day, associated in 3 with a terminal bronchopneumonia.

WHITE-CELL COUNTS

Leucocyte counts were done in 19 non-hæmorrhagic cases immediately before or during the first 3 days of the rash. They varied between 3000 and 15,400 per c.mm., averaging 8100. As in most other virus infections, granulopenia was the rule in the leucopenic cases. Counts were done on 12 of the true hæmorrhagic cases and varied between 8800 and 30,000 per c.mm., averaging 15,200. The total count was much higher if repeated at a later stage. In one the count was 18,000 on the 2nd day and 38,000 per c.mm on the 4th day. The differential counts in these cases showed a leuco-erythroblastic blood-picture without significant anæmia. This was a striking feature present to a greater or less degree in every case examined. The findings in 2 typical cases are shown in the table.

1. Wilkinson, P. B. *Lancet*, 1943, i, 120.

WHITE-CELL COUNT IN 2 CASES OF HÆMORRHAGIC SMALLPOX

Type of cell	Case 1 Total 30,000	Case 2 Total 38,000
	%	%
Myeloblasts	1·0	..
Promyelocytes	1·0	0·5
Neutrophil myelocytes	5·0	3·5
Polymorphs		
Young form	4·0	11·0
Band form	10·0	22·5
Segmented	11·0	39·0
Eosinophil	4·5	1·0
Lymphocytes		
Prolymphocytes	3·5	3·0
Medium	23·0	8·0
Small	31·0	11·0
Monocytes	0·0	0·5
Polychromatic normoblasts	6·0	Many

Platelet-counts were done in 2 cases. In one case on the 3rd day the count was 60,000 per c.mm., coagulation-time 3½ min. and the bleeding-time longer than 10 min. On the 4th day the platelet-count was 33,000 per c.mm. In the other case the platelets were so grossly reduced in numbers that an accurate count was difficult, but the coagulation-time was 8 min. and the bleeding-time 9 min.

VACCINATION STATE

All except 4 cases had been previously vaccinated. The total number of vaccinations performed on the remaining 96 was 217; 70 of the 96 had been vaccinated successfully within 2 years and 16 between 2 and 8 weeks before the disease started; 3 of these 16 vaccinations were performed in this hospital and the so-called immune reaction was observed after 48 hours, but one of the patients died 2 months later of hæmorrhagic smallpox. The 22 hæmorrhagic cases had had a total of 42 vaccinations; 11 had been vaccinated within 2 years and 18 within 5 years.

The 14 fatal cases had had a total of 19 vaccinations and only one had never been vaccinated; 2 had been vaccinated between 2 and 8 weeks previously, one successfully, the other unsuccessfully; 8 had been successfully vaccinated within 2 years and 10 within 5 years. Scars were present in at least 8 of these cases.

Of the 4 unvaccinated cases, 3 lived, though 2 of these had a very severe but non-hæmorrhagic attack. The patient who died had a severe unmodified attack with a confluent rash.

PROGNOSIS

It is clear from the foregoing facts that even very recent vaccination is no guarantee of a modified attack, for one patient vaccinated by one of us, and observed to have a typical immune reaction after 48 hours, died with gross hæmorrhagic manifestations 2 months later. But 14 of the 16 cases vaccinated within the previous 2 months were of the modified type. Successful vaccination within 2 years is of still less value as a prognostic criterion, for 33 of the unmodified and hæmorrhagic cases had records of such successful vaccination.

Neither the length nor the severity of the invasive stage was any guide to prognosis. Many of the modified cases were severely ill during this stage. True prodromal rashes were likewise of no prognostic value, for of 5 cases, 3 had modified and 2 had unmodified attacks.

The character of the specific rash in its early stages was found to be of considerable value in prognosis. Cases presenting with sparse vesicular rashes always had mild non-hæmorrhagic attacks, whereas cases presenting with a profuse macular or papular eruption were usually severe, though very occasionally such rashes aborted after 2–3 days and the attack was mild. No case resembling chickenpox in its early stage died. But of the cases in which the initial macules were surrounded by a crimson flare—the type resembling measles—all became hæmorrhagic and nearly all died, though in one such case the rash aborted on the 5th day and the patient rapidly recovered.

The rate of development of the specific rash was also found important. Vesiculation within a day, and the development of but few new lesions within 24 hours of the first appearance of the rash, were evidence of a modified attack, while slow maturation of papules and the appearance of numerous new lesions for 4 or 5 days indicated an unmodified attack.

Of the cases with hæmorrhagic manifestations, none with petechiæ alone died. One of the 5 had a modified attack and the other 4 unmodified, 3 with danger to life. Of the 13 cases with ecchymoses (purpura variolosa), 10 died and the 3 others had very severe attacks. Of the 4 with hæmorrhages confined to the pustules (variola hæmorrhagica pustulosa), 3 died and the other had a moderately severe attack. All cases with hæmatemesis, hæmoptysis or hæmaturia died. All 6 cases with the lobster rash and 9 of the 11 with the white slough in the mouth were fatal. The bad prognosis of hæmorrhagic manifestations is thus evident.

DIFFERENTIAL DIAGNOSIS

Before the appearance of the rash, we found, even in the presence of an epidemic, no features sufficiently constant to be of diagnostic value. The symptoms were simply those of an acute infection and had no specific characteristics. After the appearance of the rash, we found little difficulty in diagnosing the unmodified cases, though the typical characters and distribution of the rash were often not apparent for 4–5 days. It was in the modified cases that we experienced the most difficulty.

Modified cases.—These all resembled one disease only—chickenpox—the mildest ones throughout their course, the more severe ones for the first 1–2 days only. We found the following points of value in the diagnosis.

(*a*) *Length of prodromal fever:* When this was longer than 2 days, smallpox was the probable diagnosis, but it is important to note that 7 of our cases of smallpox developed specific rashes on the 1st day of fever and 11 others had prodromal fever for less than 2 days.

(*b*) *Distribution of the rash:* In chickenpox we always found the classical centripetal distribution with far more lesions on the trunk than on the extremities and with very few lesions on the palms and soles, and if there were such lesions they were invariably soft and superficial. In the earliest stages of smallpox the distribution was exactly similar and it was only after 2–3 days that the appearance of more and more spots on the limbs, both above and below the elbows or knee, and the development of hard and deep lesions on the palms and soles, made differentiation possible. Even when the rash was very sparse, a few such lesions on the palms and soles were almost always present and in our opinion were very suggestive of smallpox. We could not agree that the lesions of smallpox avoid the flexures.

(*c*) *Examination of scrapings from the base of the vesicles for elementary bodies of variola:* These elementary bodies were found in 47 out of 50 cases proved by their course or the development of associated cases to be smallpox. Diagnosis was possible on the first appearance of papules or vesicles and therefore on the first day of the rash. The test was therefore of great value in the early elimination of chickenpox. Details of the test and findings in these cases are being published elsewhere (Van Rooyen and Illingworth).

(*d*) *Splenic enlargement* in the presence of a vesicular rash was slight evidence in favour of smallpox, though little reliance could be placed on this finding in our cases owing to the frequency of previous malaria with residual splenic enlargement.

The following points were found to be of no diagnostic value.

(*a*) *Previous vaccination:* As shown above, previous and even recent vaccination by no means ruled out the possibility of smallpox.

(*b*) *Rapidity of maturation of the rash:* In many of the modified cases maturation was even more rapid than in chickenpox.

(*c*) "*Cropping*": Owing to this rapid maturation in modified cases and to the fact that, except in the very mildest cases, new lesions continued to appear for 4–5 days, it was inevitable that all stages of the rash from vesicles to scabs should be present at the same time, thus closely simulating the classical cropping of chickenpox.

(*d*) *Umbilication* was often present in chickenpox and as often absent in modified smallpox.

(*e*) *The shape of the lesions:* If allowance was made for the modification in shape by the site of any particular lesion, there was no significant difference between smallpox and chickenpox. In both the lesions tended to be oval in the skin folds and round on exposed parts.

(*f*) *General condition:* After the invasive stage was over, patients with modified smallpox were at least as well as those with chickenpox.

(*g*) *Successful vaccination during the disease:* We vaccinated 19 proved cases of smallpox, including unmodified cases, 1–14 days after the appearance of the rash; 16 showed the typical immune reaction in 48 hours when compared with control uninoculated scratches. Successful vaccination therefore did not exclude the diagnosis of smallpox.

In short, there was no single point other than a positive vesicular scraping which was entirely reliable for diagnosis. But consideration of a history of recent exposure, the length of the prodromal fever and the distribution of the fully developed rash enabled a clinical diagnosis to be made in most cases.

Hæmorrhagic cases.—Those with lobster rashes initially resembled scarlet fever, with which diagnosis 2 of them were admitted, but the red brawny swelling of the skin with a few interspersed angry looking macules surrounded by a crimson flare established the correct diagnosis. The rest all resembled measles. In both measles and smallpox there are usually a 3-day prodromal fever, soreness of the eyes and throat and cough, and in measles there may be a hæmorrhagic element. The early character and distribution of the rash in the two diseases may be very similar, but the measles rash tends to be pink and the severe smallpox more crimson. There is no true catarrh in smallpox. Vesiculation could not be relied on for differentiation because many of the severe cases of smallpox died before vesiculation began.

The absence of true Koplik's spots we did find of diagnostic value, but the earliest mouth lesions in hæmorrhagic smallpox, before their coalescence and the formation of the characteristic white slough, in some cases gave rise to considerable difficulty. Scrapings from the base of the papules showed the elementary bodies of smallpox in very large numbers, so this laboratory test was again of value in distinguishing doubtful cases.

It is possible that the association of purpura with fever and a leucoerythroblastic blood-picture might be a source of confusion with some acute blood diseases, though the presence of a few typical macules and the mouth lesions are sufficiently diagnostic in most cases. We were interested to note however that one of our fatal cases came from a house in which about 10 days previously there had been a case diagnosed by a civilian doctor as acute leukæmia with hæmorrhagic manifestations.

TREATMENT

In the absence of any specific therapy, good nursing is the most important part of treatment. Often much tactful persistence was necessary on the part of the nursing staff to maintain an adequate calorie and fluid intake when buccal and œsophageal lesions made deglutition so painful. A sedative, usually phenobarbital but sometimes morphine, was always necessary in the cases with profuse eruptions to allay the irritation and tense feeling of the skin. The skin was washed with soap and bathed 4-hourly with 1:4000 perchloride of mercury from the first day. As soon as the acute stage had passed the feet and hands were soaked for 15 minutes three times a day in hot water, followed by the application of soft paraffin to soften the deep lesions of soles and palms, the desquamation of which always considerably prolonged stay in hospital. For acutely tender areas of skin tulle-gras gave relief. A cradle was used to keep bedclothes off the feet. The eyes were irrigated 4-hourly with normal saline and if conjunctivitis developed 10% silver protein drops were instilled twice daily. The mouth was treated with saline or potassium chlorate and phenol mouth-washes 4-hourly.

Sulphonamides, chiefly sulphanilamide and sulphathiazole, were given in ordinary doses to most patients, in the severe cases from the onset and in the others when pustulation commenced. Though no controlled work was done on their effect, there was no evidence that they were of benefit—14 of the treated cases died. It is true that pocking was rare in our cases but there is no evidence that sulphonamide therapy was responsible. In order to determine whether sulphonamide-sensitive organisms were present as secondary invaders in the pustular stage, we cultured the contents of unbroken pustules in 15 cases and every culture was sterile. It is

therefore difficult to see how sulphonamides could be expected to be of value.

Convalescent serum (30–50 c.cm.) from recently recovered cases was given to 3 patients expected to have severe attacks, but all died.

DISCUSSION

We have described 100 consecutive cases of smallpox as we actually saw them. It is clear from this description that many of the accepted diagnostic criteria are not always tenable, at least so far as concerns smallpox in Egypt. There are some points we should like to emphasise. Modified smallpox cannot be diagnosed with certainty from chickenpox from the distribution of the rash alone until the rash has fully developed—i.e., 3–5 days from its first appearance. For the diagnosis of smallpox reliance on 3–4 day prodromal fever, on the commencement of the rash on the extremities, on centrifugal distribution and on the absence of cropping will inevitably lead to serious error. It should therefore be admitted that often an early clinical diagnosis is impossible, and dogmatism without laboratory support in the early stages should be avoided. We have found the examination of papular and vesicular scrapings extremely reliable and feel that the test may become a routine procedure. The very close resemblance of the early stages of the hæmorrhagic cases to measles has not been adequately emphasised in the textbooks and reports to which we have had access. It will be remembered that the Glasgow and Rickmansworth outbreaks were due to this confusion. We draw particular attention to what we have called "pseudo-Koplik spots"—the early small white lesions in the buccal mucosa characteristically present in the hæmorrhagic cases, which at least for some hours closely simulate the true Koplik's spots of measles.

The considerable incidence of severe smallpox in recently vaccinated personnel requires further investigation. We cannot say how many of the vaccinations enumerated by us were successful, but in view of the simplicity of the procedure we cannot believe that the recording of false positives was a significant source of error if the lymph was satisfactory. Nevertheless, the interpretation of the immune reaction demands some experience, especially in dark-skinned races, and may be impossible without a control scratch. Even so an apparent immune reaction may be due to low grade sepsis or sensitivity to protein in the lymph. A control scratch had not usually been made in the area from which our cases were drawn until 1944.

It is a remarkable fact that of the civilian cases arising in the same epidemic in the same area, less than 0·1% were hæmorrhagic and in consequence the mortality was very much less than in our cases. But the total incidence of smallpox was much higher than among military personnel, as is to be expected. Both communities have been vaccinated with lymph obtained from the same source. After the epidemic started the Egyptian public health department advised a three-scratch technique, whereas for most of the period during which our cases occurred a single-scratch technique was the routine method used by Service medical officers. It is reasonable to conclude that this significant lessening of the severity of smallpox among a community theoretically much less well protected may be due to the better protection afforded by their method of vaccination, and that the protection afforded by vaccination is in fact proportional to the area of skin inoculated.

In conclusion, we see no value in the use of cumbrous and confusing names, such as variola hæmorrhagica pustulosa, purpura variola, varioloid, alastrim and variola vera, to describe cases of different grades of severity. In this epidemic we saw all these types of case and there was no doubt that they were one and the same disease.

SUMMARY

The 100 consecutive cases of smallpox in a Middle East military hospital here described were of all degrees of severity, including 22 with hæmorrhagic manifestations. The case-mortality was 14%.

Clinical diagnosis in the early stages is often impossible. Little reliance could be placed on 3–4 day prodromal fever, commencement of the rash on the extremities, centrifugal distribution or absence of cropping. The hæmorrhagic cases closely resembled measles in the early stages, even to the presence of buccal lesions resembling Koplik's spots.

Examination of scrapings from papules or vesicles for elementary bodies was of great assistance in the differentiation from chickenpox.

All but 4 of the cases had been vaccinated, most of them by the routine one-scratch technique, and 70 within 2 years. Hæmorrhagic and fatal cases were very few among civilians in the same epidemic, vaccinated with the same lymph, but by a three-scratch technique.

Our thanks are due to Major C. E. van Rooyen for examining scrapings from our cases; to Lieut.-Colonel R. Bodley Scott, officer in charge of the medical division, who saw most of our cases; to Colonel W. B. Stevenson, officer commanding the hospital; and to Major-General J. C. A. Dowse, Director of Medical Services, Middle East Forces, for permission to publish this paper.

USE OF THE BOTH RESPIRATOR TO REDUCE POSTOPERATIVE MORBIDITY

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ANÆSTHETISTS and surgeons alike should by now be alive to the salient facts about the ætiology of postoperative chest complications. The type and site of the operation are undoubtedly the most important determining factors. Others of significance are the presence of sepsis, a pre-existing respiratory infection, including that found in the heavy smoker, and the patient's sex, age and general health. We would refer those who have not had the opportunity of following up the postoperative course of their own patients to the important papers by King (1933) and Brock (1936). We agree with Brock in exonerating the anæsthetic agent as being of importance and we concur when he says, "To imagine that the simple replacement of inhalation anæsthesia by local or spinal, for a patient known to be a bad risk, will avoid such a complication, shows a child-like faith borne of inexperience or insufficient observation."

Impaired mobility of the diaphragm after abdominal operations was recorded as long ago as 1890 by Pasteur, and Rees-Jones (1941) has demonstrated radiologically that it exists even before the patient has recovered from the anæsthetic. Anyone with a personal experience of abdominal section will be familiar with the disinclination to breathe deeply or cough when there is a painful abdominal wound. Contributing factors to inadequate respiratory movements are morphinisation and tight bandaging. Surgeons and nurses commonly regard the sitting posture, perhaps a legacy of Fowler, as necessary for the postoperative treatment even of clean abdominal operations. Although this position may make breathing easier, it detracts from the value of coughing, since the sputum now has to be brought up against gravity (Brock 1936, Nosworthy 1944). The sitting position keeps pus in the pelvis but it also keeps secretions in the bronchi. If pulmonary secretion, normal or pathological, is not removed, bronchial obstruction of some degree is inevitable and the stage is set for the development of atelectasis and its sequelæ.

TRIAL IN 24 PATIENTS

An attempt was recently made to ascertain whether by ensuring full respiratory movements major respiratory complications could be avoided. Macintosh (1940) reported two cases of gastrectomy that had been nursed in the Both respirator for 24 hours immediately after operation, with excellent results. We proposed to carry out this form of treatment on a larger number of patients.

In its original conception the experiment was simple. Nothing seemed easier than to take patients from the operating table to the respirator and submit them to what was at worst a harmless procedure. We could not however prevent "Both respirator" being translated into "iron lung" nor foresee how sinister these words would sound both to the public and to our surprise to some of our surgical and nursing colleagues.

It would be incorrect to say that the patients enjoyed their brief spell in the Both respirator. They were not apprehensive, but owing to the physical constraint were glad to be taken out at the end of 24 hours. On no occasion did the treatment give rise to any anxiety on our part. The nursing problem is no different to that encountered in cases of poliomyelitis. The combined effects of operation, anæsthetic and postoperative morphine make the recollection of the first 24 hours after a major operation hazy to the great majority of patients. Our series were no exception, and on subsequent inquiry none of our patients felt that their stay in the Both respirator had added to any discomfort they may have experienced.

Our group is admittedly small. It would have been greater even in war-time but for the inertia to be overcome in carrying out clinical research on patients in whom the anæsthetist has no "proprietary rights." However, we hope that our results, while in no way conclusive, will justify a repetition of the experiment, and we feel that this would be best done under the stimulus of a surgeon.

Results.—Twenty-four patients were nursed in a Both respirator for 24 hours after abdominal operations. Fourteen out of the twenty-four patients had no detectable complication whatever. The remaining ten patients had minor respiratory complications only. These ten were not obviously ill and had no gross physical signs in the chest. They are included however because they had a cough and some of them a temperature not exceeding 100° F. Seven of this group of ten gave a history of heavy smoking or of bronchitis or other respiratory ailment previous to the operation. No patient in the whole series suffered any major respiratory upset, such as atelectasis. We have not listed the 10 minor complications that occurred since minute subdivision would be unprofitable in so small a series. The encouraging nature of these results will be appreciated by reference to the operations done.

Cholecystectomy	8	Pelvic operations	4
Gastrectomy	1	Herniorrhaphy	7
Colectomy	1	Total	24
Appendicectomy	3		

Without such mechanical duress, it is difficult to conceive of an upper abdominal operation not being followed by some impairment of respiratory function. The frequency with which postoperative complications are recorded inevitably varies with the diligence with which they are sought. In a training school for young anæsthetists we have deemed it good discipline to avoid complacency. In recording postoperative complications we therefore strain at gnats; recent literature would suggest that some are prepared to swallow camels. We feel on this account it would be useless and indeed misleading to compare our results in this series with those published by others, since, to put it kindly, the yardsticks by which complications are deemed worthy of record differ with individual anæsthetists. We have, however, compared them with a series of patients of our own, operated on in the same period but not nursed in the Both respirator. We are aware of the fallacies of making deductions from small numbers, but we record that in this control series of twenty-four abdominal sections the incidence of postoperative chest complications was higher and in fact included two cases of lobar atelectasis.

SUMMARY

A series of 24 patients who had been subjected to abdominal section were nursed in a Both respirator for twenty-four hours postoperatively.

The operations done are known to have a high incidence of postoperative respiratory morbidity but none of the 24 patients suffered a major respiratory complication.

We are indebted to Prof. R. R. Macintosh for the original conception of this research and for his encouragement, and to the Matron and nursing staff of the Radcliffe Infirmary for their coöperation.

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TRAUMATIC SUBDURAL EFFUSION IN CHILDREN

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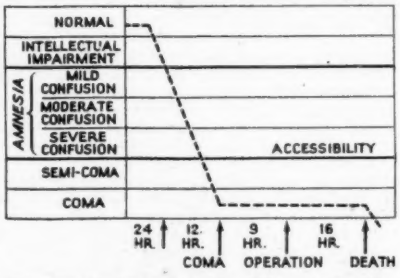
WITHIN six months 3 children in the Richmond Hospital, Dublin, have had subdural hydroma or effusion after a head injury which was not associated with any initial concussion or amnesia and therefore gave no cause for immediate anxiety. After such injuries two possible developments must be kept in mind: (1) an extradural hæmorrhage, and (2) a subdural lesion, either a hæmatoma or effusion. Any of these conditions can follow a trivial accident and have serious consequences if left untreated.

CASE-HISTORIES

CASE 1.—A girl, aged 3, fell down twelve steps of stairs at 12.40 PM on Feb. 26, 1944. The father (who was a doctor) testified that the child was well for half an hour and then developed a paralysis of the right arm and leg. This lasted about an hour and then apparently cleared up, to be followed by a severe convulsion lasting 30 minutes. At 4 PM, when admitted to hospital, she was conscious but very irritable; temp. 97·8° F., pulse-rate 180. In addition, there were twitchings of the right arm and leg, with incontinence of urine. Radiography of the skull was negative. At 6.15 PM the child was quiet, but had an obvious paresis of the right limbs. A provisional diagnosis of an expanding lesion on the left side, possibly an extradural hæmorrhage, was made. At operation (A. A. McConnell) under local anæsthesia a left temporal trephine opening was made without revealing any extradural lesion. However, on puncturing the dura a considerable quantity of clear fluid escaped. Further fluid was obtained by enlarging the dural opening and passing a curved director in all directions. The brain, which was not pulsating when first exposed, was then pulsating freely. The wound was stitched without drainage and the patient returned to the ward. The child was now bright and alert and able to move the right limbs freely. She was discharged on the 9th postoperative day, having made an uninterrupted recovery.

Fig. 1

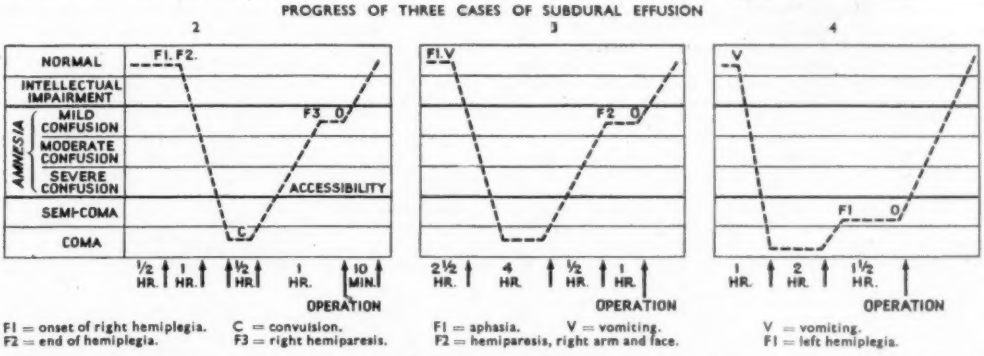
PROGRESS OF CASE OF EXTRADURAL HÆMORRHAGE



It will be noted that the amount of cerebrospinal fluid in the subdural space was not sufficient to impair consciousness except during the actual convulsion, but was sufficient to produce focal signs.

CASE 2.—On May 1, 1944, at 4.30 PM a girl of 4 fell off a wall. She was able to walk home immediately and describe the accident but later there was difficulty in speech and she vomited. At 7 PM she became unconscious and was taken to a near-by hospital where she regained consciousness 4 hours later. On admission to the Richmond Hospital at 11.45 PM she was drowsy but able to give some account of herself. There was a definite paresis of the right arm and hand, with a right facial palsy of upper-neurone type; temp. 97·2° F., pulse-rate 108. Radiography of the skull did not reveal any fracture. There was no evidence of aphasia though the patient was right-handed. At 12.45 AM (May 2) bitemporal trephine openings were made under local anæsthesia, and a condition similar to that described in the previous case was found on the left side, and to a much lesser extent on the right side. Before leaving the theatre the child was able to hold a cup in the right hand and take a drink. At 9 AM there was a slight attack of twitching of the right side of face and the right hand, but this only lasted a few minutes and subsequent recovery was uneventful, with discharge on the 10th day.

PROGRESS OF THREE CASES OF SUBDURAL EFFUSION



F1 = onset of right hemiplegia. F2 = end of hemiplegia. C = convulsion. F3 = right hemiparesis.

F1 = aphasia. F2 = hemiparesis, right arm and face. V = vomiting.

V = vomiting. F1 = left hemiplegia.

An interesting feature of this case is the lack of progression or persistence of the focal signs. Shortly after the accident there was a degree of aphasia accompanied by vomiting, to be followed 2½ hours later by coma which lasted 4 hours. Such waxing and waning of signs over so short a period would be unusual with hæmorrhage, and may help in differentiating these lesions before operation.

CASE 3.—On June 1, 1944, at 9 AM a boy of 2 fell off a chair striking the back of his head. He cried, and was put into a perambulator by his mother who noticed nothing unusual about him. During the next hour he vomited twice, and at 10 AM he was seen to be unconscious. A doctor verified the comatose state, and the child was admitted at noon to the Richmond Hospital, where after examination by Mr. Bouchier Hayes, he was transferred to the neurological department. He was now semicomatose with a spastic left arm, flaccid left leg and a double Babinski sign; the pupils were equal and reacting to light; pulse-rate 132. This state was interrupted at intervals by short attacks of twitching of the left limbs.

In the light of our previous experience a diagnosis of a subdural effusion was made, and the child was prepared for operation. Shaving the scalp revealed a small bruise over the right occipital region. At 1.30 PM a right temporal trephine opening was made without revealing any extradural lesion. However, on opening the dura in the usual manner a free flow of fluid was obtained which filled the trephine opening several times. Further fluid was obtained by enlarging the dural opening and passing a director. The brain, which at first was not pulsating, was now doing so freely and coming up to dural level. The wound was closed without drainage. At the end of the operation, which was performed under local anæsthesia, the patient was accessible and could move his left limbs, though not as freely as the right. The bilateral Babinski sign had disappeared, and before leaving the theatre he was able to ask for, and hold, a cup of water using both hands. At 6 PM there was no evidence of any focal sign, and he was discharged on the 8th day.

This case consolidated our beliefs as to the points of difference between a subdural effusion and a hæmorrhage.

DISCUSSION

It may be useful to compare these cases with one of middle meningeal hæmorrhage in which the patient was found unconscious in bed 36 hours after being struck on the head with a stone, and was admitted to the Richmond Hospital 9 hours later (Lanigan 1942). Here a large extradural hæmatoma was evacuated on the left side, but he died 16 hours afterwards without regaining consciousness. The course of events (fig. 1) indicates a progressive expanding lesion with the usual fatal result when cerebral compression has been left untreated so long. Presumably the patient's condition deteriorated during the night, for he went to bed "perfectly well," and nothing abnormal was noticed until it was found impossible to waken him at 6 AM.

Figs. 2–4 show that in the cases of subdural effusion there was some improvement before operation—cessation of the convulsion in case 1, recovery from coma in case 2, and the change from coma to semi-coma[1] in case 3. In all of them, however, the focal signs persisted, and though further improvement might have taken place without operation the question how long it is safe to wait for focal signs to clear is, I think, of academic interest only.

It is important to be aware of the possibility of a subdural effusion, because it can be removed by a simple operation without adding any risk. When an extradural hæmorrhage is suspected but cannot be found, the operator must look for another lesion to explain the patient's state.

In this paper I have used the term "subdural effusion," though earlier writers referred to fluid between the dura and the arachnoid by a variety of names, of which "subdural hydroma" is perhaps the most common. In the cases recorded here the condition appears to have been an extravasation of cerebrospinal fluid through a tear in the arachnoid membrane—though such a tear was never actually seen, and all injury to the arachnoid was carefully avoided at operation. Similar cases have been reported by da Costa and Adson (1941) and McConnell (1941), who give references to the relevant literature. All of them may be regarded as examples of pure extracerebral lesions, for there was no sign of any initial involvement of the brain

1. See Medical Research Council War Memo no. 4, 1944, for psychological terms used.

SUMMARY

Three cases of subdural effusion in children are reported. The lack of progression and persistence of symptoms is emphasised by comparison with a case of extradural hæmorrhage. It is suggested that such cases are best treated by early operation.

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COMPARISON OF SULPHONAMIDES IN BACILLARY DYSENTERY

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M B EDIN.
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SULPHATHIAZOLE, sulphaguanidine and sulphanilamide have been compared in 56 cases of bacillary dysentery at an RAF hospital in West Africa. Every case passed at least one pure blood and mucus stool. Dysentery bacilli were isolated in 27 of the cases. No case received anti-amœbic treatment, nor was *Entamœba histolytica* seen in the stools. Malignant tertian malaria had to be excluded. Cases with blood-smears positive for malarial parasites have been rejected. Cases of malarial dysentery with negative blood-smears may recover without antimalarial therapy; good reasons exist for believing their probable numbers to be negligible.

Time of return of stools to normal (in days) was taken as the measure of efficacy. Twenty-four hours' constipation was often the first intimation of recovery in cases responding rapidly; this was counted as half a day. Drugs were each tried in a small series of cases, and then given in strict rotation. Sulphaguanidine was prescribed in initial 6 gramme doses, followed by 3 g. four-hourly. The other two drugs were given in initial 2 g. doses followed by 1 g. four-hourly. Treatment became six-hourly when stools reached normal, and lasted a minimum of six days.

The average times to recovery were for sulphanilamide 3·6 days (18 cases), sulphaguanidine 3·4 days (18 cases), and sulphathiazole 2·7 days (20 cases). The numbers of cases which took longer than 3 days were as follows: sulphanilamide 13 cases (2 took 5 days, 1 took 4½ days, 5 took 4 days, 5 took 3½ days); sulphaguanidine 10 cases (1 took 5 days, 8 took 4 days, 1 took 3½ days); sulphathiazole 2 cases (both took 3½ days).

Average recovery times, and more so the relative frequencies of the longer periods, suggest that sulphathiazole is distinctly more effective than sulphaguanidine. Sulphanilamide appeared to be effective, though less so than the others. Paulley (1942) found sulphapyridine more effective than sulphaguanidine. Scadding (1944) apparently found the same; he comments on sulphapyridine's tendency to cause vomiting. We found sulphapyridine extremely effective but abandoned it on account of vomiting. Paulley's suggestion that sulphonamides act as much on the organisms in the bowel wall through the blood-stream as directly on those in its lumen may explain the greater effectiveness of these soluble drugs. Choice depends partly on toxicity, however, and sulphaguanidine is generally considered to cause less complications; but its solubility and toxicity may be greater than was at first thought (see *Lancet*, 1944a b). We decided that sulphaguanidine was the choice in mild cases, and in those with dehydration where the risk of renal complications was greater. Sulphathiazole was considered valuable in other severe cases, notably because of its rapid relief of discomfort.

We wish to thank the Medical Directors General of the Royal Air Force and Royal Navy for permission to publish this paper; and Squadron-Leaders R. J. O'Connor and M. Nelson for laboratory assistance.

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Paulley, J. W. (1942) *Ibid*, ii, 592.
Scadding, J. G. (1944) *Ibid*, i, 784.

CHANGES IN THE MARROW SMEAR IN EARLY MEGALOBLASTIC HYPERPLASIA

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THE appearance of the marrow smear in severe megaloblastic anæmia is familiar, but deviations from normal in the early stages of megaloblastic hyperplasia are less well known. Patients are rarely subjected to sternal puncture until the peripheral blood shows definite changes, so opportunities for the study of early megaloblastic changes are limited. The marrow findings in the following case are thus of interest.

CASE-HISTORY

A man, aged 43, was referred by Dr. D. H. Mackenzie with a history of increasing ataxia over eleven months. Onset insidious. Difficulty in walking accompanied by a feeling of "walking on boards" with some stiffness of the legs. Recently there has been a sensation of tightness encircling the abdomen. Some urgency of micturition and occasional incontinence. The symptoms have been progressive with no intermissions. No previous serious illness.

He was spare, with no apparent anæmia, and a normal tongue. No abnormal findings in heart, lungs, or abdomen. Urine clear. Cranial nerves and upper limbs normal. His abdominal reflexes were absent, but he had no sensory loss on the trunk. Motor power was impaired in the lower limbs, but there was no apparent muscle wasting. Skin sensation normal. Impaired vibration sense in the left leg. Joint sense impaired. Tendon reflexes equal but much exaggerated; plantars flexor; ankle-clonus present. Rombergism; gait seriously ataxic, some spasticity. Cerebrospinal fluid: 4 lymphocytes per c.mm.; total protein 50 mg. per 100 c.cm.; chlorides 720 mg. per 100 c.cm.; Lange gold curve 0000000000; Wassermann reaction negative.

A fractional test-meal showed complete achlorhydria.

Blood-counts before and after treatment with 'Hepatex,' 4 c.cm. daily for a week, are shown in table I, and marrow-counts in table II. The diagnosis made was subacute combined degeneration of the cord with early pernicious anæmia.

TABLE I—BLOOD-COUNTS BEFORE AND AFTER TREATMENT WITH 'HEPATEX,' 4 C.CM. DAILY FOR 1 WEEK

Findings	BEFORE TREATMENT	AFTER TREATMENT
Hb.	92% (Haldane)	112%
Mean diameter of red cells	7·6 μ	7·2 μ
Red cells	4,590,000	5,850,000
	Anisocytosis and some poikilocytosis	Stain normally
Colour-index ..	1·0	0·95
White cells	9800	7000
Polymorphs ..	66%	74%
Monocytes ..	6%	2%
Lymphocytes ..	28%	24%
Marrow smear ..	Some macrocytes (megalocytes) present Early megaloblastic hyperplasia	Normoblastic reaction

INTERPRETATION OF MARROW FINDINGS

Before considering the changes in the marrow smear in detail certain considerations must be taken into account. An attempt to give an accurate picture of a marrow smear presents difficulties. The nucleated red cells—particularly the more immature types—tend to occur in groups and many of the larger cells are pushed to the margins of the slide in making the smear. The leucocytes have a similar uneven distribution. To obtain a representative count the film must be examined from margin to margin over a considerable area. For the purpose of this paper 1000 nucleated cells were counted on this principle. A further difficulty arises from the presence of a percentage of cells which defy classification. These consist of deformed or smear cells and of nuclei which appear to have no cytoplasm. Some of the latter resemble the nuclei of lymphocytes, others are larger and lack any clear morphology while the remainder are probably pyknotic nuclei extruded from mature red cells. Many hæmatologists believe that nucleated red cells can be grouped only on broad morphological differences (megaloblasts, early and late erythroblasts, normoblasts) and do not recognise any finer differentiation. The point at which a megaloblast becomes an early erythroblast must necessarily be ill-defined and much confusion arises from the varying conceptions of the cells included under the term "megaloblast." The work of Israëls [1] has been outstanding in clarifying the position, and his classification and terminology are used in this report. The recognition of early megaloblastic changes has practical

TABLE II—MARROW-COUNTS (ISRAËLS'S TERMINOLOGY); 1000 CELLS COUNTED ON EACH OCCASION

Findings	BEFORE TREATMENT Hypercellularity definite	AFTER TREATMENT Rather less definite	Findings	BEFORE TREATMENT Hypercellularity definite	AFTER TREATMENT Rather less definite
	%	%		%	%
Pro-erythroblasts	1·4	0·6	Intermediate myelocytes	14·7	14·1
Megaloblasts A	2·5	0·0	Late myelocytes	21·4	24·5
,, B	6·1	0·0	Polymorphs ..	14·5	17·4
,, C	1·8	0·0			
Normoblasts A	0·4	2·4	Lymphocytes	5·6	4·3
,, B	1·4	4·5	Monocytes ..	0·2	0·4
,, C	4·8	7·4	Türk cells ..	0·1	0·4
			Smear cells ..	4·2	4·5
Myeloblasts ..	1·7	1·4	Nuclei ..	7·0	10·0
Early myelocytes	12·2	8·1	Erythro-myeloid ratio	1 : 3·5	1 : 4·4

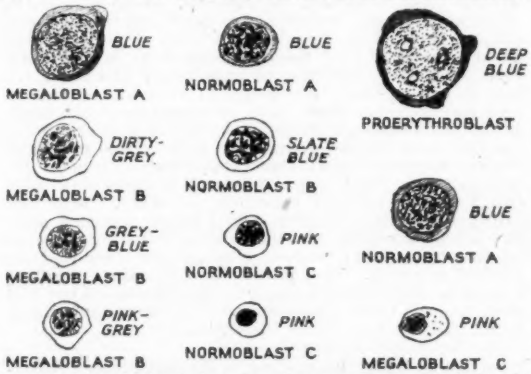
value, and it is at this stage that classification of red cells on broad differences alone is likely to fail diagnostically.

Israëls's classification demands a close study of nuclear detail and involves difficulties which must be clearly stated. Though the pro-erythroblast may well include two cells of differing developmental type (the pronormoblast and the promegaloblast), they cannot at this early stage be differentiated morphologically. The megaloblast A does, however, present recognisable differences in nuclear pattern from the normoblast A and the great majority of these cells can with experience be placed in their proper group. At the next stage in maturity the megaloblast B with its finely reticular nucleus is in contrast to the normoblast B in which the nucleus contains condensed chromatin clumps. At the C stage, however,

1. Israëls, M. C. G. *J. Path. Bact.* 1939, **49**, 231; *Ibid*, 1940, **50**, 145.

differentiation is blurred, since the nucleus has become pyknotic in both types. Nevertheless some of these late cells can be recognised as megaloblasts C. Fortunately differentiation at this stage is unnecessary for purposes of diagnosis.

In the description which follows only those cells about which no doubt was entertained are described as megaloblasts. Types of varying degrees of maturity occur which are intermediate between megaloblasts A, B and C, but since only pathological cells are described as megaloblasts intermediate cells are included under the group which they most closely resemble and do not affect in any way the trend of the picture. When pro-erythroblasts are described as "megaloblasts," their differentiation from early erythroblasts presents a different problem and a real difficulty which will be discussed later.



Types of nucleated red cells drawn from the marrow smears described in the text. Colour of the cytoplasm is indicated (Leishman's stain).

The types of cells described are illustrated in drawings made from the marrow smears (see figure). Whitby and Britton[2] have a good coloured plate showing erythroblasts.

DISCUSSION

The most noteworthy features of the marrow before treatment are the high percentage of megaloblasts B and the marked general hypercellularity. The myeloid series shows considerable hyperplasia of normal type, but with a shift to the left. The diagnosis, however, rests primarily on the high percentage of megaloblasts B. Yet some hæmatologists do not recognise these cells as megaloblasts, but restrict the term to pro-erythroblasts and megaloblasts A. In this case the pro-erythroblasts show no great increase, nor does the percentage of pro-erythroblasts and megaloblasts A taken together. Nevertheless the marrow is megaloblastic. If normal cells (pro-erythroblasts) are described as "megaloblasts," it is important that normoblasts A should be clearly differentiated. Since pro-erythroblasts normally develop into normoblasts A, intermediate types are met with and normoblasts A can be clearly recognised only when they have attained a certain maturity. A possible source of error in marrow interpretation is the inclusion of normoblasts A as "megaloblasts," and the description of intense normoblastic hyperplasias (in which pro-erythroblasts and normoblasts A may be present in significant numbers) as "megaloblastic" or "mixed megaloblastic and normoblastic" reactions. By limiting the name "megaloblast" to pathological cells Israëls has done much to overcome this difficulty.

In the present case, after daily liver injections for a week, the marrow reverted to a normoblastic type with lessening of the myeloid hyperplasia and of shift to the left. The peripheral blood showed a corresponding improvement.

SUMMARY

A case of subacute combined degeneration of the cord showing early blood changes is described.

The details of the marrow smear before and after treatment with liver are given, and the appearance of early megaloblastic change is discussed in detail.

I am indebted to Dr. A. A. Lovett for the peripheral blood-counts.

2. Whitby, L. E. H., Britton, C. J. C., Disorders of the Blood, London, 1944, plate III, p. 11.

Reviews of Books

The Venereal Diseases

JAMES MARSHALL, MB LOND., command venereologist to Eastern Command and London district; lately senior RMO at London Lock Hospital. (Macmillan. Pp. 340. 21s.)

IN this country, before the war, the diagnosis and treatment of venereal disease was largely left to the specialist. Undergraduate instruction was superficial, and the average practitioner, faced with a case, usually referred the patient immediately to the clinic. The increase in venereal disease since 1940 has again brought the importance of its diagnosis and treatment to the fore, and many practitioners have found themselves ill prepared for these tasks. This book will supply their want. The first three parts deal adequately with gonorrhœa, syphilis and the rarer venereal diseases, including also a useful chapter on other conditions encountered in venereology—e.g., non-gonococcal urethritis, phimosis, paraphimosis, balanitis, condylomata acuminata, scabies and *Trichomonas vaginalis* infestation. The final part describes in detail the technique of urethral irrigation, urethroscopy, dark-ground examination for *Spirochæta pallida*, the collection of blood for serological tests, intravenous and intramuscular injection, lumbar puncture, circumcision, fever therapy and chemical prophylaxis.

The book has over 100 illustrations, 8 coloured plates, case-histories and tables; with very few exceptions the facts are presented accurately and the teaching is sound and orthodox.

Industrial Toxicology

DONALD HUNTER, MD LOND., FRCP, physician to the London Hospital. (Clarendon Press. Pp. 80. 10s.)

Dr. Donald Hunter's Croonian lectures for 1942 (*Quart. J. Med.* 1943, **12**, 185) have now been republished in book form. He does not deal with all the toxic substances encountered in industry but has selected the most important. The book is divided into four main sections: the metals, the aromatic compounds, the chlorinated hydrocarbons and the glycol group. The section on lead poisoning bears the stamp of Dr. Hunter's special experience of both clinical and experimental aspects, and he writes with equal authority on the organic mercury compounds, benzol, and tri-ortho-cresyl-phosphate. The article on benzol supports the view that it is better not to use this solvent at all, but that if it is used ventilation should be as good as possible; in a workshop the characteristic odour of benzol should be regarded as a danger signal. The clinical picture of industrial poisoning by tri-ortho-cresyl-phosphate is that of a polyneuritis with a flaccid paralysis of the distal muscles of the upper and lower limbs. Recovery is slow but usually complete. Non-industrial cases of poisoning had been known for 40 years before the first industrial case was reported; they were seen in patients with pulmonary tuberculosis treated with phosphocreosote, in people who had drunk Jamaica ginger or "jake," in women who had taken apiol as an abortifacient, and in those using a soya-bean cooking oil which had been accidentally adulterated. All these substances were found to contain varying proportions of the compound. Experimental evidence suggests that the phenyl ester and also the meta- and para-cresyl esters are harmless.

The book is a welcome addition to British works on industrial medicine, attaining a high standard both in scholarship and readability.

Biology Staining Schedules

(2nd ed.) R. R. FOWELL, M SC. (Lewis. Po. 24. 2s.)

THIS pamphlet gives an adequate description and explanation of simple routine staining methods, and is suitable for elementary students to have with them in the laboratory.

Sir Humphrey Milford is publishing the English edition of COBB'S *Borderlands of Psychiatry* (*Lancet*, 1944, i, 54) at the Oxford University Press on Nov. 30. The price is to be 14s.

Medical Societies

MANCHESTER MEDICAL SOCIETY

A MEETING of this society on Oct. 4 was devoted to

Thyrotoxicosis and Thiouracil

Dr. M. L. THOMSON said that treatment with thiouracil seemed to be symptomatic rather than curative, and the hope of a cure lay in maintaining the patient's health until the thyroid gland returned to normal. Among 109 published cases there was 1 fatal case of agranulocytosis in a patient receiving 2 g. daily. Of 13 cases he himself had treated over periods up to 9 months, 3 were submitted to operation, 1 because of rapid increase in the goitre (in a girl aged 15), 1 because of neutropenia a week after treatment began, and 1 at the patient's request. The remaining 10 showed a good response to the drug, but relapsed 2–8 weeks after it was discontinued. During the initial 10 days when 0·6 g. was given daily the patient should be in the ward and frequent white-cell counts were needed. Later at least weekly attendance as an outpatient was essential for white-cell counts and observation. During this period a dosage of 0·2 g. daily was usually necessary until the patient's weight returned to normal. As a further maintenance dose 0·1 g. or even 0·05 g. daily might suffice. There were 3 cases of chronic auricular fibrillation and 1 was regularised by thiouracil. There were no toxic complications apart from neutropenia in 1 case, transient maculopapular eruption (1), transient itching of the skin (2), and doubtful drug fever (1). The impression gained was that the main field of usefulness for thiouracil at present was in cases judged unsuitable for operation or where the risk of operation was higher than usual. Until the potentialities of the drug had been fully explored, all patients should be treated at centres where facilities for control were available.

Prof. JOHN MORLEY said that at the moment surgical treatment seemed to give the best results; the objections to thiouracil were that it does not cure, increases the size of the goitre (requiring more urgent removal), necessitates continuance of treatment, and carries a great risk of agranulocytosis. Its effects were slower than, and inferior to, those of iodine in preoperative treatment, and it produced troublesome vascularity of the gland. His operative results showed only 51 (2·4%) deaths in a series of 2094.

Mr. R. W. WYSE referred to the operative difficulties, arising from increased vascularity, in those of Dr. Thomson's cases requiring surgical treatment after taking thiouracil.—Mr. WILSON HEY was interested in the possibility of using thiouracil as a diagnostic test.—Dr. J. F. WILKINSON emphasised the need for care in testing these new drugs, in view of the risk of undesirable toxic effects such as agranulocytosis, acute hæmolytic anæmia, and thrombocytopenic purpura. Such treatment should be given only in hospitals or clinics where adequate constant control could be maintained. He had had good results with thiouracil in cases unsuitable for X-ray or surgical treatment or where these had failed.—Dr. REGINALD ELLIS had noted vomiting after the use of thiourea, with immediate relief on cessation of the treatment; iodine subsequently produced its normal response. One patient had remained well for 3 months after initial treatment with thiouracil but had then shown a sudden recurrence of thyrotoxic symptoms which did not respond to thiouracil.

New Inventions

DISTRACTOR FOR FRACTURED LEG

THE appliance described here was originally devised to suit emergency conditions at an EMS hospital with limited orthopædic equipment, but reduction with this distractor has proved to have definite advantages which may justify its wider use.

The apparatus consists of a footboard with a groove cut to fit the leg of whatever table is in use (fig. 1). Through the pulley fitted into the same board runs the traction cord, which is attached to the shorter arm of a lever supported by a block two or more inches high to give the lever a sufficient range of excursion. No screws or turnbuckles are needed.

The patient is placed on the table with the fractured leg hanging at a right angle over the edge or over a firm support (fig. 2). A pin or wire through the os calcis is connected with a stirrup and the cord is attached to the stirrup. The operator sits in front of the leg. He can now depress the lever with his foot while his arms are free to manipulate the fracture. He can achieve the desired degree of distraction with a minimum of effort and with no time lost with screwing and unscrewing, as with the rigid types of distractors. The "elasticity" of the device enables him to feel his way through all the stages of the reduction, and he has only to relax slightly the pressure on the lever and his sense of touch will tell him whether impaction has taken place.

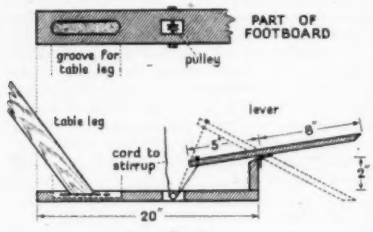


Fig. 1

Herein lies one of the principal advantages of the apparatus. Screw devices convey sometimes a false sense of security, and radiograms do not always tell us the degree of impaction with certainty. The dangers of distraction of fragments, especially in lower leg fractures, need no emphasis. Occasionally one may overestimate the chances of manipulative reduction in a particular fracture—e.g., in some spiral fractures—and little will then have been lost by using this method in the first place. Relaxing the pressure on the lever allows one to detect the case in which repeated displacement of the fragments occurs; one will then be able to proceed without delay to open reduction and internal fixation, if so desired. The operator will be spared the unpleasant surprise of "slipped" fragments some days or weeks later, after the leg has been put into plaster-of-paris.

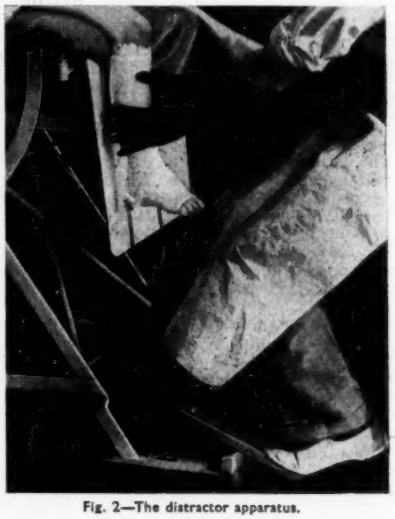


Fig. 2—The distractor apparatus.

Once the fracture is reduced, a plaster cast is applied with the pin or wire incorporated. It may sometimes be tiresome to keep the foot on the lever all the time until the plaster cast has set or while a compound fracture is dealt with, and an attendant can then fix the traction cord by fastening a clip to it just behind the pulley.

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County Hospital, Keighley. M. P. LAUFER, MD BRNO.

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THE LANCET

LONDON: SATURDAY, NOVEMBER 25, 1944

Psychiatric Clinics

THE Goodenough report on medical schools has an important chapter on the teaching of psychiatry. The writers demonstrate clearly the need for bringing psychiatry into closer relation with general medicine, and the need therefore for better instruction in the subject both for the future practitioner and for the future psychiatrist. Some readers of the report, however, believe that the practical proposals made would have the unwelcome effect of stereotyping the instruction provided; and so serious a possibility demands consideration. The Goodenough Committee, it is suggested, have underestimated the value of the independent clinics established by psychotherapists at a time when psychological teaching and treatment were lacking in our great hospitals. Also they remark that the teaching of normal psychology "should avoid sectarian disputes," and though this phrase may only be equivalent to saying that the time of biology students should not be wasted in examining disputes about evolution, it has been interpreted in some quarters as a threat to academic freedom. In the light of history it is regarded as an anemographic straw.

Under various guises a fundamental difference of outlook has shown itself again and again through the centuries. Should we look for the explanation of human behaviour in terms of humours, chemistry, nerve-cells, conditioned reflexes and the like; or must we consider the reactions of the man as a whole, under the stimulus of desires and instincts that call for conceptions belonging to a sphere other than that of test-tubes and microscope slides? Nineteenth-century medicine chose the first alternative, and several generations grew up accepting it without question. To those who qualified thirty years ago psychology was still an embryonic study, while the term "functional nervous disorder" was intended to describe one that had its origin in a disturbance of some physiological function of nerve tissue. Then came FREUD's new conception of those disorders, involving emotions and instinctive urges and mental processes beyond the consciousness that had hitherto been accepted as the whole of what we call mind. This attack on fundamentals called forth strong opposition, but gradually the new ideas permeated medicine. At the height of the controversy psychiatrists were generally on the side of the opposition while psychotherapists represented the new ideas. Differences of opinion there must still be in this vigorous and expanding specialty, but controversy is all to the good so long as it is scientific.

The report suggests that, in the course of time, as the various medical teaching centres throughout the country build up their psychiatric departments, each will take its share of training specialist psychiatrists; meanwhile it will be necessary to look to Edinburgh and London as the principal centres. In London the Maudsley Hospital, aided by the resources of the London County Council's mental health service, could, in association with the British Postgraduate Medical School, develop as the European centre of progress in psychological medicine. Such a result would be a source of pride, and the suggestion is welcome provided alternative or competing psychiatric views have their opportunity. So far as postgraduate teaching is concerned, such opportunity is provided at present by some of the medical schools, with their psychological departments, and by those independent clinics whose psychotherapeutic approach to psychoneurosis has helped to enrich our understanding of the processes of the mind. The high standard of work of these clinics is indicated by the part taken by their members today in Army psychiatry, where psychiatrists of all shades of opinion are working together harmoniously and efficiently. The question, then, must be: how should these independent clinics be incorporated into the system of official medical education? Should they be embodied in the existing university schools, or affiliated to the university psychiatric clinic? The Goodenough report was of course concerned only with organised teaching. Nothing proposed in its pages could hinder the development of non-university clinics by the same means as in the past: they would still be at liberty to follow any line of study that seemed good to them, and to teach those who wished to learn. It is reasonable to assume, however, that if development is along the lines suggested by the Goodenough Committee money may not be made available to them as generously as, for instance, to the Maudsley Hospital. In the past the Maudsley, like the independent clinics, has received nothing from the University Grants Committee, and research there has been financed largely by the Rockefeller Foundation. It seems desirable that independent clinics, unless violently heterodox, should also be fitted into the university system, with proper safeguards about the standard of teaching. We are faced once more with the old problem of how to plan in a free society—or how to provide for freedom in a planned society.

Smallpox Among the Vaccinated

THE clinical difficulties encountered by ILLINGWORTH and OLIVER in an outbreak of smallpox in the Middle East, mostly among military personnel, have a familiar ring. In the 100 cases discussed on another page they found that the general symptoms of the invasive stage resembled those in other diseases, backache not being the prominent symptom their textbooks and teachers had led them to believe. The duration of the pre-eruptive phase varied so widely that it became of doubtful diagnostic value in many cases. In consequence the diagnosis often turned on the rash, which in unmodified cases was characteristic by the time efflorescence was complete. In modified cases, however, no single criterion could be relied on, not even the distribution, which was sometimes indistinguishable from chickenpox. RICKETTS[1] in 1908 wrote: "In every epidemic cases arise in which the eruption is so highly modified and the character of the lesion is so anomalous that there is an inadequate basis for diagnosis." Nevertheless, relative distribution is the most dependable of all signs, and the DG EMS has recently reissued in pamphlet form a 1923 lecture by WANKLYN in which

1. Ricketts, T. F., Byles, J. B. Diagnosis of Smallpox, London, 1908.

this point receives special emphasis. ILLINGWORTH and OLIVER, stressing the occasional resemblance of severe smallpox to measles, describe a misleading stomatitis in some cases with early lesions which they call pseudo-Koplik's spots. In scrapings of these and the cutaneous lesions they found Paschen's elementary bodies, which enabled them to make an early diagnosis in 47 out of 50 cases. The test [2] is based on the large size and special arrangement of the elementary bodies of variola. A stained film of the scrapings, examined with a magnification of 1000, can be reported on within half an hour of the collection of the specimen. The results are positive as early as the first day of the rash, and for this reason especially the test promises to be of immense value. The old flocculation and complement-fixation tests,[3] besides requiring a high standard of serological technique and suitable controls, were positive only late in the disease, giving only a retrospective diagnosis; PAUL'S[4] rabbits' cornea test is said to be disappointing in its results. In the new test clumps of elementary bodies can be readily recognised, and if they are not present in large numbers the test is negative. Clusters of the extruded elementary bodies are found close to ruptured epithelial cells, from which rows of bodies may stretch across the film. They are demonstrated with ease in the papular and vesicular stages, but when pustulation and secondary infection set in they disappear. By contrast the elementary bodies of chickenpox are too small, too few and too feebly staining to be detected by this simple film technique. It remains to be seen how valuable the test will be in less expert hands.

A disturbing feature of this outbreak was that it occurred in a highly vaccinated military population—96% had been vaccinated at some time, a vaccinal state about three times as good as that of the non-military population of Great Britain. Is, then, vaccination less efficient than it was? If it is, does the fault lie with the lymph, the vaccinator or both? STEVENSON, in another paper in this issue, exonerates the lymph. He reminds us that for the last 60 years those conversant with the disease have recognised that vaccination and revaccination, however carefully performed, do not confer absolute immunity. There is indeed no sharp division between susceptibility and immunity, but all gradations of resistance to infection. As a clinical test vaccination provides a useful standard, but like all biological tests it is not to be regarded as absolute. The protection provided by all forms of active immunisation varies in degree and duration, and despite widely held views to the contrary this has always been so after vaccination. Thus occasionally the immunity conferred by vaccination is lost with astonishing rapidity. Among ILLINGWORTH and OLIVER'S cases such instances were common, if the records of successful vaccination can be relied on: 70% had been vaccinated successfully within two years and 16% within two months. But such records are not always reliable; a disturbing observation has been the significantly high number of Service men who successfully "take" when revaccinated after a short interval. The proportion of successful insertions varies with the experience of the vaccinator. In an excellent supplement recently revised,[5] the Army Medical Department emphasise three aspects of vaccination—the insertion, the interpretation, and the recording of reactions. Lymph should be used within a week of "manufacture," but if properly refrigerated can be kept for a fortnight. In preparing the arm disinfectants should be eschewed and reliance placed on cleansing with soap and water and drying carefully with a sterile swab. The insertion should be made through the lymph just deep enough to draw a little blood without causing free bleeding. The vaccination should be allowed to dry before applying a (non-disinfecting) dressing; since this takes several minutes and is likely to slow up long parades there is a tendency to hurry it. STEVENSON rightly questions the evidence for the widely held view that immunity increases with the number of insertions, but does not deny the possibility. Perhaps more insertions simply increase the chances of a take. The Army has now reverted to multiple insertions when there is special danger. In the absence of an epidemic a single insertion is to be made. When this does not take, two further attempts must be made at weekly intervals using three insertions. Vaccination is to be repeated every 5 years for troops on home service and every 3 years for troops overseas. In the presence of an epidemic all at risk must be revaccinated, using three insertions, unless they have been successfully vaccinated within the previous fortnight; if there is no take two further attempts must be made at intervals of 4 days. Few susceptibles will pass this sieve.

The most serious fault in current vaccination practice is the unsatisfactory inspection and recording of reactions. Vaccination may be followed by three different types of reaction according to the degree of immunity. A primary reaction is the ordinary "take" or vaccinia of susceptibles; it reaches its maximum intensity *after* the 7th day and is followed by a solid immunity of variable duration. Among MINNING'S[6] group of 717 men vaccinated by the multiple pressure (acupuncture) method, nearly 2% lost their immunity so quickly that when revaccinated 10–15 months later they reacted with a second vaccinia. The second type, the accelerated or vaccinoid reaction, reaches its maximum *within* 7 days and is regarded as an aborted vaccinia due to moderate immunity. The third type, the "immediate" reaction, which reaches its maximum within 72 hours, is regarded as evidence of a high degree of immunity, and is named "the reaction of immunity"; but in fact the type of response, the time of maximum intensity and the duration of the reaction bear a close resemblance to bacterial hypersensitive reactions. The pitfalls in reaching conclusions about immunity from tests of sensitivity are apparent to those who have had, for example, to interpret tuberculin tests in terms of immunity to tuberculosis. Inability to appreciate the significance of these early reactions is responsible for the spreading view that every vaccinated person must react in one of these three ways; a complete failure is not accepted. Yet failures to take due to

2. van Rooyen, C. E., Illingworth, R. S. *Brit. med. J.* 1944, ii, 526.
3. *Spec. Rep. Ser. med. Res. Coun., Lond.* no. 143, 1929 (Burgess, W. L., Craigie, J., Tulloch, W. J.). *Ibid*, no. 156, 1931. (Craigie, J., Tulloch, W. J.).
4. Paul, G. *Beitr. klin. InfektKr.* 1919, 7, 267.
5. *Army med. Dep. Bull.* Suppl. no. 9, November, 1943. *Ibid*, Suppl. no. 18, October, 1944.
6. Minning, C. A. *Bull. US Army med. Dep.* August, 1944, p. 82.

immunity are common and are to be expected on a-priori grounds. The danger lies in interpreting all failures to take as evidence of immunity, when some arise from failure to vaccinate properly. Moreover, if immediate reactions are due to sensitivity the subject may still be susceptible, as was ILLINGWORTH and OLIVER'S patient who died of hæmorrhagic smallpox 2 months later. A further difficulty has arisen because some medical officers have assumed that an "immune" reaction occurred in all cases not having vaccinia or a vaccinoid reaction. They have entered an immune reaction in their records although they did not inspect the arms until a week or more after the vaccination, by which time immediate reactions would have passed off.[7] Clearly records of "immune" reactions are unreliable and the interpretations to be placed on them call for further investigation.

The limitations of vaccination must be clearly stated despite the mighty pens ready to exaggerate every failure. But we shall continue to regard it as the surest safeguard against a loathsome and fatal disease and seek "to fence off as many of the pitfalls and signpost as many of the right roads" as possible.

Sulphonamide-Resistant Gonorrhœa

THE sulphonamide drugs, valuable as they are in the treatment of gonorrhœa, have not survived the test of time as the universal remedy for that disease. Even the earlier reports described a proportion of failures, which seemed to increase with experience but decreased with the advent of more potent and less toxic derivatives. The most striking failures are those in which the causative organism does not disappear from the secretions and the disease takes its course without effect from large doses of normally potent remedies. It has been thought that some strains of the organism are naturally immune from the bacteriostatic effects of the drugs; others acquire immunity through under-dosage in the early stages of the disease. There has been laboratory evidence that strains which are thus resistant in the body are also resistant in the test-tube, and cases have been cited in which husbands and wives, or others known to be infected with the same organism, showed similar lack of response to treatment with adequate dosage. But some held this evidence unconvincing and believed that the root of the trouble was inability of the infected host to develop those immune bodies which alone can give the coup-de-grâce to an organism restricted in its power to reproduce itself. The recent work of HARKNESS[8] supports this view. He found that with gonococci cultivated from 21 clinically resistant and 12 susceptible cases there was no correlation between laboratory and clinical findings; indeed, 3 strains from clinically resistant patients were among the most susceptible in vitro. Moreover, of 87 couples in whom it could be assumed that man and woman had been infected by the same organism, in 13 one or other of the partners proved to be resistant to treatment, but in only 2 instances were both partners resistant. This problem has been investigated from another aspect by BOROFF,[9] whose observations suggest that the sera of certain people have an anti-sulphonamide action in vitro, and that this action bears a direct relation to their clinical resistance to sulphonamide therapy. All the sera of 13 patients with gonorrhœal urethritis clinically resistant to sulphonamide therapy inhibited the action of sulphathiazole on a susceptible strain of pneumococcus in vitro, and in some cases the inhibitory action persisted when the sera were diluted to 1 in 20. In 5 cases which showed clinical response to sulphonamides the inhibiting power of the sera diluted 1 in 2 was absent or far less, save in one case, in which smears and cultures of the prostatic secretion demonstrated the gonococcus five days after sulphonamide therapy was discontinued, although clinical cure had appeared to be complete. This work is as yet in its early stages, but it suggests that another laboratory test, apart from that of drug-susceptibility of the infective organism, may help us to forecast the probable value of sulphonamide therapy in the individual case.

Whatever the reason for the failure of treatment in sulphonamide-resistant cases, many clinicians have the firm impression that such cases are increasing in number and that the proportion of successes obtained with sulphonamides in gonorrhœa is progressively falling. The most disquieting of these reports comes from Italy, where the disease is particularly prevalent. CAMPBELL[10] reports that the results obtained with sulphathiazole and sulphapyridine in the treatment of Army patients in Algeria and Tunisia showed a close parallel with those in the United Kingdom. But during the campaigns in Sicily and Italy the experience from the first was very different. Short courses of treatment which had previously given as much as 70–75% of good results were successful in less than 25%, and many of the apparently cured cases relapsed. Dosage was therefore increased from 10 g. of sulphathiazole in two days to 25–30 g. of sulphathiazole or sulphapyridine in four or five days. Nevertheless second courses of treatment were necessary in 70–80% of cases and many patients continued to show gonococci in their secretions after long and heavy dosage. Some improvement resulted from better facilities and more expert supervision, but even so less than half the cases of acute gonorrhœa responded to the generous initial course of sulphathiazole, and relapses and local complications remained common. If this experience is repeated throughout the liberated countries of Europe the tax on man-power and on the medical facilities of the fighting services is likely to be severe. Certainly the high hopes that gonorrhœa would cease to be a serious problem to armies in the field must be tempered with misgivings.

Fortunately penicillin promises to reduce this gap in the therapeutic defences. Increasing supplies have permitted large-scale trials in the treatment of gonorrhœa, and the early results are very satisfactory indeed. Of 4439 sulphonamide-resistant cases treated in United States naval hospitals between July 1943 and March 1944, no less than 4258 (96%) were accepted as cures after one course of treatment.[11] Of the 181 failures, 141 were re-treated with penicillin and success was claimed in 139 of them; thus there were only 2 definite penicillin failures. In most of these patients the drug was injected intramuscularly

7. See *Ibid*, 1944, **79**, 2.
8. Harkness, A. H. *Brit. J. vener. Dis.* 1944, **20**, 2.
9. Boroff, D. A. *Bull. US Army med. Dep.* July, 1944, p. 111.
10. Campbell, D. J. *J. R. Army med. Cps*, 1944, **82**, 269.
11. Schwartz, W. H., Edge, C. O. *Nav. med. Bull., Wash.* 1944, **43**, 193.

or intravenously, but the intramuscular route was regarded as the one of choice. Intramuscular dosage varied from 71,000 to 125,000 Oxford units, with an average of 99,000 units per case; the tendency throughout the period of investigation was to reduce dosage. The intravenous method required more penicillin, and was no more effective. The optimum dosage was thought to be 20,000 units every three hours for 5 doses. Similar success is reported [12] in 1686 sulphonamide-resistant cases treated in fifteen US Army hospitals with total amounts of penicillin ranging from 40,000 to 160,000 units intramuscularly. There were 126 failures from the single course but all responded to a second or third. The results were as good when the whole course was completed within twelve hours as when it was spread over twenty-four. A dosage of 50,000 units seemed to be on the borderline of effectiveness, giving in one hospital only a 50% cure-rate; with this amount there was no margin to allow for loss of potency on storage, or inaccuracies of assay. Here again the optimum dosage seemed to be 100,000 units given 20,000 at a time three-hourly. No follow-up was possible in these cases and the maximum period of observation was 21 days. GREENBLATT and STREET [13] have obtained 100% recovery-rate with penicillin in 109 female patients ranging in age from 3 to 48 years, all but 8 of whom had had one or more courses of sulphonamides; they report cure in 104 cases with a single course of 60,000 to 150,000 units, and in the rest with a second course. They end their paper with a warning against undue optimism until it is certain that there will not be trouble from asymptomatic carriers or penicillin-resistant strains of gonococci. There is no lack of similar claims from other sources. Nevertheless, many of the early reports on the treatment of gonorrhœa with sulphonamides claimed successes which were not far short of these. It would be premature to conclude that as penicillin becomes generally available the problem will cease to exist. Other and well-tried remedies remain, and may keep their place.

In the early days of sulphonamide therapy it was noted that better results were obtained in acute gonorrhœa if the course of sulphanilamide was begun after time had been allowed for an antibody response to the infection to develop. This observation is recalled by HARKNESS's good results in sulphonamide-resistant cases when fever was induced by intravenous vaccine three weeks after the disease was contracted. During the intervening period he controlled the infection by low-pressure irrigations of the urethra. CRONIN [14] has suggested a method whereby the pyrexial effect of intravenous TAB vaccine may be prolonged by giving the vaccine in an intravenous drip. His aim was to maintain temperature at or above 103° F. for at least five hours and the treatment was effective in 14 cases of resistant gonorrhœa with courses of vaccine which ranged from 8000 to 27,000 million organisms. There were no major ill effects, but the procedure is probably more risky than CRONIN seems to suppose; deaths have been reported from the use of large doses of TAB intravenously, and even his initial dose of 500 million was larger than that which others have found necessary to stimulate an adequate reaction. NICOL,[15] for instance, using the "divided-dose" technique, found that two doses each of 25 million organisms provoked an excellent response in most cases. Treatment by hyperpyrexia produced by mechanical means, whether by Kettering hypertherm or inductotherm, fell into neglect when so much was expected from the sulphonamides, and looks like being eclipsed altogether by the new star, penicillin. The recent work of WALLACE and BUSHBY [16] has given proper emphasis to its hazards; and any treatment which requires such exacting standards should not be administered except under ideal conditions. But given these conditions it may remain an important therapeutic measure for the otherwise hopeless case.

12. Sternberg, T. H., Turner, T. B. *J. Amer. med. Ass.* 1944, **126**, 157.
13. Greenblatt, R. B., Street, A. R. *Ibid*, p. 161.
14. Cronin, E. *J. R. Army med. Cps*, 1944, **82**, 263.
15. Nicol, C. S. *Brit. J. vener. Dis.* 1942, **18**, 47.
16. Wallace, J., Bushby, S. R. M. *Lancet*, 1944, **ii**, 459.

Annotations

THE YEARS BEFORE SCHOOL AGE

CARE of the young child whose mother has to go out to work has been provided for many years by nursery schools. These offer him "nurture" as Margaret McMillan conceived it—rest, fresh air, good food, active and stimulating play and an ordered social life with others of his own age. Nursery schools, however, are still relatively few, and all have waiting-lists. In some areas they are supplemented or replaced by nursery classes in the elementary schools, but these have not the same tradition, and are often poorly equipped for the management of small children. Moreover, before the war they rarely provided a midday dinner, which is regarded by the Nursery School Association as an essential part of the job. Both nursery schools and nursery classes cater for children between the ages of 2 and 5. During the war years it has been necessary to provide care for many more such children, and even for infants, whose mothers wished to supplement their income by working in industry, as well as for some of those whose homes had been destroyed by bombing. This led to the development of both day and residential war-nurseries. In their report for the year ending last March the Ministry of Health say that the total number of nurseries in operation was then over 1500, and the original programme had already been completed. There were also 750 war-time nursery classes in operation and 159 nurseries which kept open day and night so as to cater for the children of women on night-shift. About 400 residential nurseries, with about 13,000 places, have received babies and children under five. A few nurseries take "short-stay cases"—children whose mothers cannot look after them for a week or two because they are having another child, or for some other reason.

War-time nurseries have undoubtedly served a necessary purpose; but, despite some shining examples, they have not proved an unqualified success. Criticisms of them mostly derive from the plain fact that the very young child needs to spend a lot of time with his mother. The nursery school is different, for its shorter hours do not disrupt this close relationship: the children come after breakfast and are taken home at 3.30 or 4 PM. But when a child goes to a war-nursery so that its mother may spend long hours at work, it may be brought before breakfast and taken home to sleep, or more than ready for sleep, at night. If the mother is on night-shift she must be sleeping during some of the child's waking hours. The other main objection to war-nurseries applies in greater or less degree to aggregation of young children for any purpose. It is the risk of

infection. Helen Mackay told the Medical Women's Federation last year[1] that even in two good day-nurseries, taking 120 children, observed over a period of 6 months, the absence-rate through illness was 1 day in 4; and at the same meeting Marjorie Back noted that over 166 nursery months a group of nurseries had been closed for quarantime for a third of their working time. Finally, staffing problems have been serious, and those appointed have not always been fitted by training or temperament for the work.

Whatever provision is made for young children in the future, these are faults which no-one will wish to see perpetuated, and which are not offset by the benefits gained from a good diet. We should keep them in mind as things to be avoided, especially since the new Education Act lays on local authorities the duty of providing nursery schools wherever there is a demand for them. These should be established in the true nursery-school tradition, as places intended for the benefit of the child, not merely for the convenience of the mother or even for the advantage to society of any work she may do.

The Nursery School Association, which has just attained its 21st birthday, is thus faced with a dilemma. Unwilling that the new duties of the local authorities should rust, the 70 branches of the association are encouraging an outspoken demand for nursery schools up and down the country, knowing from experience that all such schools quickly acquire waiting-lists. On the other hand the association is well aware of the shortage of properly trained staff, and fears lest local authorities may appoint teachers with too little, or the wrong, experience. To meet this danger, the association is urging on the Ministry of Education the importance of training more staff as quickly as possible, and is doing what it can to encourage a high standard among local authorities. One method of setting the standard is by exhibitions, such as the one now in progress at 1, Park Crescent, London, W1. This shows equipment, home-made toys, learning materials, books, pictures, music, and design for buildings. Study of the exhibits, including those in the room called "days without toys," reveals how thought, skill and ingenuity can contribute to the nurture of the young child.

MECHANICAL RESPIRATORS

THE Both respirator, child of Drinker's "iron lung" and grandchild of Woillez's "spirophore" of 1876,[2] is now a familiar object in every large hospital in Britain, thanks to Lord Nuffield. At the time of his benefaction in 1937, the main thought was to tide over the grave respiratory crisis occasionally encountered in infantile paralysis. There must be few doctors, and none in fever practice, who have not seen or heard of such a case saved by the prompt use of one of these machines. The lessening of this menace of infantile paralysis alone has justified the distribution of what was judged the most suitable machine available at the time. Those who then called it "a wanton waste of private benevolence"[3] must mostly have changed their minds. The principles and mode of action of the respirator are now widely familiar and its ready availability has stimulated its use in divers other conditions in which respiratory activity is temporarily in abeyance. Thus Linton and Sarkar[4] kept a patient breathing during the acute stage of snakebite poisoning. Todesco[5] did the same in a case of diphtheritic paralysis of the diaphragm. Death was averted after the hitherto fatal mistake of administering paraldehyde in ounces instead of drachms.[6] The use of the respirator to combat respiratory depression of barbiturate poisoning may now be said to be routine. Novel uses are those described by Malkin[7] for treating scoliosis, by Marshall[8] in crush injury of the limbs, and by Macintosh[9] for reducing postoperative pulmonary complications after upper abdominal operations in poor-risk cases. This last suggestion has now been further investigated by Mushin and Faux, who report their results on another page. In little over five years the Both respirator, once described as a "white elephant," has produced persuasive reports of its use both as life-saver and as a valuable adjunct to physical medicine. The wide distribution has also made mechanical respirators less an object of dread to the public and the medical profession.

1. See *Lancet*, 1943, ii, 21.
2. Pratt, C. L. *Lancet*, 1939, i, 237.
3. Menzies, F. *Brit. med. J.* 1939, i, 35.
4. Linton, R., Sarkar, N. *Indian med. Gaz.* 1941, **76**, 92.
5. Todesco, J. M. *Lancet*, 1942, ii, 261.
6. Macintosh, R. R. *Brit. med. J.* 1939, i, 827.

PSYCHIATRIC ADVICE IN INDUSTRY

PSYCHIATRIC advice, as Dr. Aubrey Lewis pointed out at the Royal Society of Medicine on Oct. 14, is not necessarily the same as advice from a psychiatrist. The occasion was a joint meeting of the section of psychiatry with the Association of Industrial Medical Officers, when the subject was thoroughly and practically discussed. The ordinary advisers in industry, he said, are the works doctor, the personnel manager and the welfare director; and the psychiatrist may well be kept in reserve for special cases. He suggested that the works doctor might interview workers when they leave school to enter the factory, when they show signs of maladjustment or neurotic symptoms, after illness, and when for medical reasons a change of job seems to be indicated. These interviews should be conducted with sympathy and detachment: there should be no hasty direct questioning, no "handout" advice. This opinion was shared by several other speakers. Dr. Ernest Capel regretted that the medical student in the past has not even been taught to take a psychological case-history properly; Dr. Russell Fraser protested against the stock question "Have you any worries?"—well calculated to tongue-tie anybody. It was felt that the medical officer must have the time and patience to find out the main attitudes of the worker, and to assess his value as well as his disabilities. Aptitude tests might be used to confirm a judgment. Dr. Capel recalled Culpin and Smith's experience that the dotting-machine is good for picking out obsessionals. The industrial doctor might, in his view, forget his midwifery and much of his therapeutics; but he must know his chemistry and physics and learn something about engineering, safety engineering, and factory management. His duties are mainly preventive, and he is responsible for the health of the group as a whole. The causes of breakdown are multiple, as Dr. Elizabeth Bunbury pointed out:

> "The girl who weeps speechlessly in the factory medical department may be crying because she has reached a stage of exasperated boredom through a monotonous job, or because she is exhausted through a long journey and much housework on top of long hours, or because she has had a quarrel with her boy friend, or because she has not got a boy friend to quarrel with, or because of a combination of these causes."

The strains of home and private life, in fact, are as pregnant of neurosis as those of the factory, and there is thus good reason, as Dr. Lewis noted, for ensuring that there shall be no sharp cleavage between intra- and extra-industrial advice.

Other factors influencing breakdown are frequent shift changes with the unsettling need to reverse sleep habits and meal-times, long hours (sometimes encouraged by the bonus system), boring and repetitive jobs, noise (in which Dr. Bunbury included Music While You Work), faulty ventilation, and supervision by those who are themselves neurotic. An occasion was mentioned when a reduction of hours was vigorously opposed by many workers because it meant loss of overtime pay.

7. Malkin, S. A. S. *Ibid*, 1939, ii, 702.
8. Marshall, D. V. *Lancet*, Oct. 28, 1944, p. 562.
9. Macintosh, R. R. *Ibid*, 1940, ii, 745.

Bonuses encourage output and seem to have come to stay; but they can be applied in such ways that they either split up the group, or integrate it into a coöperative unit. Needless to say the method chosen should foster community spirit, which is often very high. Dr. Bunbury recalled an unprepossessing mental defective who enjoyed the maternal care of a succession of women during six years. Boredom can be relieved by showing those who do the dull jobs what they are contributing to the finished article. Even a transfer to a machine which makes a slightly different small part gives a worker some relief. Noise and music do not disturb those doing routine jobs, but may irritate those who have to think—tool-makers, for example. Gratuitous noise is distressing: in one shop the foreman relieved his own irritation, and kept his workers jumpy and tense, by making the power system emit a loud shriek, at intervals as uncertain as his temper.

Foremen chosen only for technical ability and drive may not have the right qualities for supervising others. Dr. Capel felt that a neurotic should never be put in charge of his fellow-workers, and that obsessionals make particularly unsatisfactory foremen; being hard workers and over-conscientious themselves they are apt to expect too much of others. Anxious or hysterical men are almost as bad, he finds; and men free from neuroses are not necessarily going to make good supervisors. Fortunately the works doctor is not called upon to pick foremen—he need only point out those who will not do. The prevention of accident neurosis turns partly on early examination and clear prognosis, with emphasis on recovery, not disability, and partly on proper rehabilitation. Dr. R. S. F. Schilling spoke warmly of the results at Roffey Park, where injured workers are able to recover away from the stresses of both home and factory.

TEMPORARY HOUSES

THE new Town and Country Planning Act, so Mr. W. S. Morrison said in a recent broadcast, shows a green light to those who wish to get on with rebuilding our bombed towns and cities. As a step in this direction, the Ministries of Health and Works have issued a memorandum[1] to local authorities on the preparation and management of temporary housing schemes, in which the types of bungalow approved by the Government are illustrated. From the medical point of view there was always much to be said for the prefabricated house. Overcrowding inevitably means danger to health, especially from the tubercle bacillus. The provision of a great many separate dwellings is therefore welcome, and it would ill become us as doctors to look too closely at the æsthetic points of this gift horse, though as ordinary citizens we may experience a sinking feeling. It must also be borne in mind that no-one knows yet how prefabricated houses will stand up to the English climate—a point which may well have a bearing on health.

Four types of bungalow have been approved: the Portal, made of pressed steel, the Arcon Mark V, the Uni-Seco and the Tarran. Their outward appearance and the suggested types of layout recall some bad features of building by private enterprise before the war. Inside, however, they are as well equipped as has always been promised, though it seems a mistake, where all space is cramped, to make the kitchen the smallest of the four rooms. Local authorities may put up the bungalows on land acquired for permanent houses under the Housing Act, but they are warned to avoid using land which may be needed in the early stages of their permanent building programme, and to ensure that redevelopment is not obstructed by the presence of the bungalows, which are supposed to be going to last some ten years. As soon as the bungalows are ready local authorities must accept delivery at once: no plans are being made for storage. They are therefore advised to begin acquiring land now. Apart from sites which will ultimately be used for permanent houses, and land not intended for permanent buildings, authorities may put up bungalows on devastated sites and undeveloped land such as marginal strips of agricultural land. It is intended that priority shall be given to those living in insanitary or overcrowded houses, to ex-Service men and women, and particularly to those who have been disabled. Rents are to be fixed by the authorities at fairly high levels, the feeling being that if the rents are too low families will be unwilling to move into permanent houses when these are ready. It seems probable, however, that after ten years of caravan life with a growing family most people will be ready for a change.

1. Temporary Accommodation. HM Stat. Office. Pp. 31. 6d.

SUPPORT FOR VOLUNTARY HOSPITALS

PERHAPS the most striking fact to be found in the statistical summary of the King's Fund[1] is that in 1943, after some four years of war, only 27·3% of the total maintenance income of the London voluntary hospitals came from the EMS and public authorities. At £1,722,921 payments by patients and contributory schemes increased by £235,239. The figures, it is suggested, "should go a long way towards convincing those who fear that the voluntary hospitals are dying slowly but inevitably for lack of funds that their fears to date are groundless, at least so far as the hospitals in London are concerned. ... The Government is contributing towards the cost of beds reserved for casualties, but when all is said and done, the hospitals are still, as they were before the war, largely dependent on voluntary contributions for the maintenance of adequate provision for the civilian sick. Such contributions are providing adequate support for current needs, but they are leaving no adequate margin to meet the cost of capital works, which will be required after the war to restore the hospitals to their normal activities." In the Metropolitan Police District, covered by the King's Fund, there are 169 voluntary hospitals, of which 97 had surpluses and 48 deficits. With maintenance income at £5,413,200 and expenditure at £5,311,900, the surplus was rather lower than in 1942, but the Fund notes with pleasure that free legacies at £532,184 actually increased by over £54,000, though it was predicted that this source of income would be the first to suffer from economic difficulties. The number of beds open for patients rose from 16,245 to 17,679 during the year, and the average number occupied daily was 11,496 against 9945 in the previous year. The duration of the patient's stay was 16·7 days for the general hospitals and 28·1 for the special. Expenditure under salaries and wages rose by 20% through adoption of the Rushcliffe scales of salaries for nurses.

WE regret to announce the death on Nov. 16 of Sir ROBERT KELLY, emeritus professor of surgery in the University of Liverpool and consulting surgeon to the Liverpool Royal Infirmary. He was in his 66th year.

1. King Edward's Hospital Fund for London. Statistical Summary for the Year 1943. From 10, Old Jewry, EC2, 1s. (1s. 6d. post free).

EPSOM COLLEGE: *St. Anne's Scholarships.*—The council will shortly proceed to award scholarships to girls attending Church of England Schools. Candidates must be fully 9 and under 16 years of age, and must be orphan daughters of medical men who have been in independent practice in England or Wales for not less than five years.

France Pension.—The council will also in March award a pension of at least £30 per annum to a necessitous medical man, fully 55 years of age, who has been registered for five years.

Forms of application can be obtained from the secretary's office, Epsom College, Epsom, Surrey, and must be returned by Jan. 15.

Special Articles

VACCINATION AGAINST SMALLPOX

APPARENT ANOMALIES IN PROTECTION AFFORDED

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Blaxall in 1930 stated that "vaccination and revaccination afford a sure protection against smallpox and that by no other means at present known can this be obtained." This, most of us will agree, is true for the very great majority of people. The Royal Commission on Vaccination stated in 1896 that vaccination diminishes the liability to be attacked by smallpox and that this protection, at its greatest in the years immediately succeeding vaccination though not the same in all cases, might fairly be said to cover in general a period of nine or ten years. The German Commission of 1884 found that the protection varies within wide limits but on the average it lasted ten years. Both commissions were of opinion that more than one insertion of vaccine was more effective in the production of protection than a single insertion, the German Commission laying down at least two insertions and the British three or four with a total vaccinated area of at least half a square inch. They both agreed that revaccination renewed protection which the lapse of time had diminished. It would appear then that, if vaccination were carried out by multiple insertions, herd immunity could be secured by revaccination within a period of nine or ten years, although individual immunity in some instances would be lost before that period. In 1928 the Ministry of Health Committee on Vaccination, faced with a general decline of public vaccination because the prevailing smallpox was of the minor type, so as to render vaccination more acceptable considered it expedient to make a trial of vaccination by one insertion. They, however, considered that vaccination by multiple insertions should still be available for such persons as desired to ensure the greatest measure of protection available at one operation. They also advised that revaccination be offered to persons at the ages of 5–7 years, and again at the ages of 14–16 years.

Among other statistics, carefully compiled and dealing with such large numbers that errors associated with small figures were eliminated, the German Commission of 1884 considered the incidence of smallpox in the Prussian (or German) army and this matter is of particular interest from the point of view of this paper. It shows that, however carefully a group or community be vaccinated and revaccinated, some cases of smallpox and even some deaths from that disease will occur, especially if it is brought into contact with an unprotected population among whom smallpox is prevalent. My information is derived from a paper dealing with the findings of that commission written by E. J. Edwardes (1887). A considerable number of such cases and some deaths occurred in the German Army from 1867 to 1874. I reproduce table I from Edwardes's paper and have constructed table II from the information he gives.

TABLE I—PRUSSIAN (OR GERMAN) ARMY. SMALLPOX CASES AND DEATHS PER 100,000 MEN

	1867	1868	1869	1870 1st half	1870–1	1871 2nd half	1872	1873 1st qtr.	1873–74	1874–75	1875–76	1876–77	1877–78	1878–79	1879–80	1880–81	1881–82	1882–83
Cases	74	38	43	30	565	684	161	36	7·3	8·3	6·4	6·3	4·8	4·5	2·1	6·9	4·5	2·2
Deaths	0·8	0·4	0·4	0·0	33	27	5·6	2·6	0·3	..	..	..	..	..	..	..	..	..

TABLE II—DEATHS FROM SMALLPOX PER 100,000 OF POPULATION IN PRUSSIA

1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882
43	18	19	17	243	262	35	9	3·6	3·1	0·3	0·7	1·2	2·9	3·6	3·6

The Imperial Board of Health, according to Edwardes (1887), remarked that "revaccination had already been practised in the army for several decades with a fair degree of carefulness." Compulsory vaccination began for the civil population in 1874. The Board of Health contrast the smallpox cases in the Army in 1867–69 with the fewer number occurring in the Army after 1874. They observe "No other explanation can be afforded for this, than that just as during the war smallpox in the German army considerably increased, in consequence of its coming into contact with smallpox in France, so the same thing must have happened in Germany itself before the war, when there was more smallpox amongst the civil population than there has been of late years." They note that not a single death occurred in the Prussian army since 1874: it should be remarked however that some cases of smallpox continued to occur. The Franco-Prussian war occurred in 1870–71 and there was a severe epidemic of smallpox in 1870–72. Camus (1933) tells us that among the 600,000 mobilised by France in six months of the war of 1870–71, there were 125,000 cases of smallpox and 23,740 deaths. Grossheim, quoted by Edwardes, stated that the Prussian Field Army had hardly any smallpox when it first went to France. During the war 4991 cases occurred and 297 deaths. Of 1005 cases with 61 deaths the vaccinal state was known; 109 cases with 2 deaths occurred among the "successfully revaccinated" group; it is not stated when they were revaccinated. It is obvious that the German commission of 1884 was fully aware that vaccination and revaccination did not confer absolute immunity against attacks of smallpox.

VARIABLE DEGREE AND DURATION OF PROTECTION

While the value of vaccination and revaccination has been completely established by studies of outbreaks of smallpox, and the safeguard which the great majority of individuals acquire is certain, many medical men may not be aware of the fact that the degree and duration of the protection varies in individuals and that in exceptional cases it falls very short of the average. The occurrence of such cases has always been acknowledged by persons conversant with the subject and they do not in any way affect the validity of the general conclusions as to the protection afforded to the majority of vaccinated persons. Even an attack of smallpox itself, while giving a durable immunity in a very large proportion of cases, in a few exceptional instances fails to protect against a second attack. Edwardes mentions that Bousquet found 34 second attacks in over 16,000 cases of smallpox collected from thirty epidemics, and other authorities are quoted who report such occurrences. One instance of a third and fatal attack is given. In most of these cases there were long intervals between the two attacks, but one individual was infected twice during one epidemic, and in another case three months elapsed between the two attacks. It is not surprising therefore to find in a few instances that vaccination also fails to protect against smallpox even in years immediately succeeding vaccination.

Coupland (1897) reported in the Gloucester outbreak of 1895 a case of a child whose vaccination had been performed in three places 22 days before the attack of smallpox commenced. The eruption was profuse and yet there were "3 inflamed vaccinal sites covered by dark scabs." The child died. Here, at a time when protection against infection is in almost all cases complete, sufficient protection even to mitigate the severity of the disease had not developed. Cory (1898) recorded 3 cases of children who developed smallpox at the ages of two or three years. They had been successfully vaccinated as infants as evidenced by 1, 2, and 4 scars respectively. Hanna (1913) reported 7 modified smallpox infections in the age-group two to five years; they had been vaccinated as infants. Lemaire (1926), regarding an epidemic in Algiers of 693 cases of smallpox, reported that the intervals since the last successful vaccinations were 15–45 days in 4 cases (2 died); 3–6 months in 8 cases (6 died); 6–12 months

in 4 cases (3 died); and 1–2 years in 8 cases (5 died). Kenawy (1933), in the Alexandria epidemic of 1932–33, observed some cases of smallpox in persons recently vaccinated. He remarks "C'est-à-dire que 0·6% de la totalité seulement ont conservé l'immunité jusqu'à un an, 0·8% ont pu la conserver deux ans." For comparison it is to be noted that about 38·5% of those infected fell ill ten or more years after their primary vaccination. Boulnois (1936), from an experience of an epidemic in Southern India, quoted a case where several members of a family developed mild attacks of smallpox 47 days after being vaccinated. Le Huludut (1936), reporting an outbreak in Chandenager, French India, in 1935, recorded 10 cases of smallpox among those successfully vaccinated 12–30 days before the attack and 1 case vaccinated 60 days before the attack. It is particularly mentioned that the results of vaccination had been carefully observed in all its stages. Two cases of hæmorrhagic smallpox were observed in subjects successfully vaccinated 12–15 days before.

The Commission on Smallpox and Vaccination of the Office International d'Hygiène publique issued a questionary to various countries which included one on immunity after vaccination. The Mexican experience (1934) was that revaccination is necessary five years after primary vaccination and a reference to those exceptional cases of failure to protect within that period was made "... il s'est présenté des cas de variole chez des enfants agés de 2 ans, qui presentaient des cicatrices évidents de vaccination et qui, évidemment, avaient perdu l'immunité." In a résumé of late researches in the USSR, Morosov (1938), chief of the smallpox section in the central Epidemiological and Microbiological Institute of Moscow, reported that 24 cases of smallpox with 2 deaths (out of 283) occurred among those vaccinated successfully within 12 months, and 13, with 2 deaths, between 1 and 2 years (Ozol's experience); of 109 cases of smallpox among vaccinated persons, 3 occurred among those vaccinated 1–2 years before and 9 among those vaccinated 2–5 years before (Lipkine's experience). Both in Mexico and in the USSR the usual vaccination technique is by three insertions, according to replies to the general questionary addressed by the commission (1930). Leake (1927), of the US Public Health Service, says "It is astonishing how soon after smallpox or vaccination some exceptional individuals lose their immunity."

CAUSES OF FAILURE

That the protection acquired by recent vaccination or revaccination against infection by smallpox sometimes falls far short of the average is an established fact. It is to be noted that cases of this kind happened when more than one insertion was the practice in vaccination (as when Cory practised), or with a single insertion, as in some of the cases recorded by Kenawy. It would be worth knowing if they are more common in the latter as Ernest Hart (1899) believed. He held the view that, on account of inefficient vaccination (by which he denoted making only one or perhaps two insignificant insertions of lymph), cases of postvaccinal smallpox, modified though they might be by the vaccination, occurred in every epidemic. Belief in the greater efficacy of more than one insertion in the production of protection is still held in most countries, vide replies to the questionnaire of the Commission on Smallpox and Vaccination (1934). A second factor has been conjectured; for example in the Mexican reply referred to above. The potency, or virulence, as the Mexicans call it, of the lymph is thought by some to determine the degree and duration of the protection. This factor is given, in conjunction with the first, in the reply from Yugoslavia, and Kaiser and Runes (1936) gave this as one of several determining factors. In a résumé of the replies to the questionary, the Commission on Smallpox and Vaccination (1934) stated that not enough investigation had been made into this matter. It must, therefore, be regarded as unproved.

I question whether the antigenicity of a lymph depends on the potency provided the latter is sufficient to ensure a "take." Potency relates to the infectivity or "take" value. In the immunisation of a community, as in mass vaccination in face of existing variola, it is essential to issue as strongly potent lymphs as one can. The more people successfully vaccinated the greater the herd immunity. But this consideration does not apply to the immunisation of any particular individual. That the lymph "takes" and gives a vesicular development is all that counts for the individual: he is successfully vaccinated. There is no evidence, so far as I know, that the protection in an individual successfully vaccinated is affected by whether the lymph gives 90% or 100% "takes" in the vaccination of a large number of people. The potency of a lymph in this country, as in many, is governed by an internationally agreed minimum standard (League of Nations 1927); no maximum was fixed. Most of the German vaccine institutes (1931) and those in many other countries consider this standard too low and prefer to issue lymphs of higher potency to secure a better "take" value. The authorities who prescribed this standard could not, it seems obvious, have considered that antigenicity was linked in any degree with "take" value.

It has been stated by Kaiser and Runes (1936) that the development at vaccination of an imperfect vesicle may be due to the quality of the lymph. My opinion is that, for lymphs derived from the same strain of vaccine, the development of a perfect or imperfect vesicle depends mostly on host idiosyncrasy. This view is substantiated by experience in the Government Lymph Establishment. We vaccinate very numerous calves and rabbits in the course of a year with lymphs of varying potencies but all of the same strain of vaccinia and derived ultimately from the same source. The same lymph will produce vesicles or papules of varied character on different animals. This has been observed especially in the recurring use of the same control lymph on numerous rabbits, but the same thing is noted in the vaccination of numerous calves with the same lymph on the same day. Again, although much weight cannot be placed on this argument, whether the dilution of the lymph is 1 in 1000 or 1 in 10,000 on the same rabbit the lymph will produce identical reactions in time of onset and in development. No differences in the quality of the vaccinal reaction or in the time in which it appears are noted when a weakly potent or moderately potent lymph is placed on the same rabbit side by side with a strongly potent lymph. Only a difference in the degree or quantity of reaction is noted. Public vaccinators occasionally report that a lymph produces on one individual a vesicular reaction denoted as mild, small or retarded, while in the hands of the same operator on another individual the same lymph is stated to give a good or normal reaction.

Cases in which protection afforded by vaccination did not develop or was short-lived, especially in young children, have occurred in many countries and in recent as well as in remote epidemics. The special incidence among young children may have little significance as attention was focused on cases in which smallpox attacked persons recently vaccinated, and inevitably most of them would be young children. Other age-groups might well have been more severely affected. Such cases cannot be attributed to any defect in the antigenic quality of the lymphs employed, for they have followed the use of lymphs of varying origins in many countries and in remote as in recent epidemics. They have also occurred when the technique of vaccination was by numerous insertions or by one insertion. Whatever the influence of this difference in technique or of the extent of the area vaccinated I believe that lack of protection is in the main due to failure in the response of the individual to immunisation.

Great variation is shown by individual animals in susceptibility to vaccinia infection, and this well illustrates how wide can be differences of individual response. By international agreement it was decided to test the potency of lymphs by certain approved methods. The authoritative article on smallpox by Blaxall (1930) details these and describes the results on animals which must be produced by 1 in 1000 dilution of the tested lymph and mentions that it may be necessary to repeat an experiment because of the insusceptibility of the test rabbit. In 1932 the Medical Research Council referred to this matter in a "*Memorandum on a method of testing vaccine lymph*" and it was emphasised in a paper on "Host influence in the characterisation of response to papilloma protein and to vaccinia virus" by Bryan and Beard in 1940. Our experience is that a few calves are entirely insusceptible to infection by lymphs which give good results on other calves. We have occasionally met with rabbits totally insusceptible. On the other hand we have found some instances of well-marked hypersusceptibility, and between these

extremes all grades of diversity are obtained. The same specimen of diluted seed lymph may produce on one calf such a small efflorescence that only a few grammes (3 to 10) of vaccinal pulp may be collected, while from a second, from an area about the same size, a large collection of 30–50 grammes or more may be obtained. We have vaccinated many rabbits with 1 in 1000, 1 in 10,000 and 1 in 50,000 dilutions of the same control lymph, making ten insertions of approximately equal areas with each dilution. An end-point for each rabbit can be calculated where there is an equal chance of infection taking or not taking, employing a method used by Parker (1938). Table III shows the great variations in rabbits with regard to this 50% end-point for the same lymph. Three control lymphs are considered. Similar variations have been obtained by intradermal inoculations.

There are, of course, other factors concerned in the acquirement of infection—e.g., dosage—but in smallpox

TABLE III—DILUTIONS OF THE LYMPHS PRODUCING AN EQUAL CHANCE OF INFECTION OR NON-INFECTION IN RABBITS. TEN INSERTIONS OF EACH DILUTION WERE MADE

Lymph no.	No. of rabbits used	Rabbits giving 50% end-points at varying dilutions						
		Under 1/1000	1/1000 to 1/10,000	1/10,000 to 1/20,000	1/20,000 to 1/30,000	1/30,000 to 1/40,000	1/40,000 to 1/50,000	Over 1/50,000
1943	29	..	20	6	1	..	..	2
1961	63	2	39	7	10	2	2	1
3600	44	..	29	11	2	1	1	..

as in vaccinia I believe that that of individual susceptibility is of very great importance. Bryan and Beard (1940) wrote:

"The factors underlying these variations" (they are referring to animal response to infection) "in many instances are little known, so that efforts to eliminate, ignore or account for the variation result in much confusion in the interpretation of findings involving animal response. In the field of pharmacology, rapid progress has been made in recent years in the development of methods for the biological assay of drug action in animals. In these procedures the existence of variation in animal response is fully recognised and accepted. ... Not enough work has been done with viruses to make possible more than the suggestion that the character of response to infection with these agents is determined in the main by variations in host resistance or susceptibility."

Among other factors to which they attributed the varieties of types of revaccination reactions, Kaiser and Runes (1936) mentioned variations in individual capacities for production of immunity. Since experiences of failure in protection are so widespread, and have occurred in the past as well as in the present, differences in the degree of protection afforded against smallpox may largely be determined by individual variations in response to immunisation.

VACCINATION AFTER EXPOSURE TO VARIOLA INFECTION

There has been a tendency to regard recent experience in Glasgow, Edinburgh and elsewhere concerning the occurrence of smallpox, however modified, in persons successfully vaccinated within a few days of first exposure to infection, as a new and unexpected phenomenon. In an annotation in the *British Medical Journal* of March 18, 1944, it was remarked that the fact that vaccination in the incubation period of variola need not give absolute protection against the infection was established "by recent Scottish experience." The Glasgow and Edinburgh experiences were entirely in line with what has occurred in the past. As Marsden (1943) said regarding the Glasgow experiences of 1942, after stating it was in keeping with the teaching of Ricketts and his successor, "it serves to emphasise the prophylactic limitations of vaccination performed after exposure to infection." Ricketts and Byles (1908) ruled that vaccination done within a day or two after exposure and followed by a normal reaction is a certain preventive, but to this rule, they said, there were occasional exceptions. "The fact is that the pertinent date is not when the subject is vaccinated but when the reaction begins." Delay of the reaction they attribute to a peculiarity either of the lymph or of the subject. They also remark, "Protection against smallpox can never be promised confidently if its acquisition be postponed until after exposure." Immermann of Basle (1902) writes as follows: During epidemics of smallpox it has been observed that vaccinated individuals not rarely become infected with variola during the course of their vaccinia. ... In such cases the outbreak of the *initial symptoms* (my italics) "is far more frequent in the first week of the vaccinia"; (he gives the incubation period of naturally acquired variola as 10–13 days) "they commence more rarely in the middle or end of the second week and have scarcely ever been observed in the course of the third week." Again, "If a vaccination is made early enough in the period of incubation of the variola, however, it is beyond question that the disease may not seldom be completely aborted." Leake (1927) states that "Successful vaccination performed on the day of exposure will almost always give complete protection."

Hanna (1913), in a statistical account of 1163 cases of smallpox admitted to the City and Port of Liverpool in the ten years preceding, gives details of 73 cases of concurrent variola and vaccinia. These people landed in Liverpool from ships and were incubating smallpox. In chart B ("Concurrent variola and vaccinia among cases unvaccinated before infection with smallpox") the details are as follows. There were 28 cases in all. Two vaccinated on what Hanna calls the second day of infection—he gave the interval between infection and rash as 15 days—developed modified smallpox. By the usual convention, taking this interval as 14 days, these cases would be regarded as being vaccinated on the first day. One vaccinated on the third day of incubation of the disease (or second) developed the disease: one vaccinated on the fourth day (or third) developed the disease. All these cases were mild smallpox. Two cases vaccinated on the fifth day (or fourth) developed the disease; one mild, one moderate. In another chart (C) he considered 45 cases which were revaccinated after infection. One case revaccinated on the third day of incubation (or second) developed mild smallpox. One on the fourth (or third) day developed mild smallpox. Two on the fifth (or fourth) day developed mild smallpox. Hanna also analyses 20 cases reported in 1878 by Birdwood of the Metropolitan Asylums Board's hospital. Two vaccinated on the third day (or second) of incubation developed discrete variola. All these cases reported by Hanna were successfully vaccinated.

Robertson (1913), of New South Wales, states that, in an epidemic of variola minor comprising 1037 cases, 56 occurred among those successfully vaccinated within the incubation period, some during the early days of incubation: he reports one case vaccinated 15 days before the eruption, one 14 days, four 13 days, and so on. It should be noted that he also states that "amongst a number of cases which were vaccinated successfully after one exposure, in none did the disease develop when the inoculation was performed before three days after that exposure." Perhaps they were not infected or got a small dosage of infection.

Kenawy (1933), of Alexandria, observed that 150 cases of variola major developed among those vaccinated during the incubation period. Of these, 31 had been vaccinated during the first 3 days after infection but only 3 or 4, I gather, successfully. He added that it was true that some persons so vaccinated escaped the disease but he concluded that vaccination during the period of incubation cannot with certainty protect. Note also Le Huludut's experience (1936), already quoted in the first section of this note.

Table IV is taken from Morosov's résumé of late USSR reports. It concerns the experiences of Ozol. Among these cases there were only 9 revaccinated persons. Only those persons are included who showed vaccination pustules. The author remarks,

"Le tableau montre qu'une vaccination ou revaccination réussie, faite pendant la période d'incubation de la variole, exerce peu d'influence sur la gravité de la maladie. Cette influence ne se fait sentir que si la vaccination réussie a eu lieu dans les 10 premiers jours de l'incubation."

It is to be noted that Morosov does not refer to the effect on the acquirement of smallpox but on the gravity of the disease, and that the table relates apparently to the date of onset of smallpox and not to the date of the appearance of the rash.

Very important in the consideration of this matter is the fact that medical officers of health have adopted the convention that the incubation period of smallpox is 12 days to the onset of the disease, or 14 days to the appearance of the rash. This can relate only to average periods. Actually these vary not only from one epidemic

TABLE IV—INTERVALS BETWEEN SUCCESSFUL VACCINATION AND THE APPEARANCE OF SMALLPOX

Days ..	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Cases of smallpox	21	11	19	17	12	7	11	4	4	4	4	6	4	..
Deaths ..	9	6	7	5	1	..	1	..	1	..	..	1	..	..
Course unknown	2	..	2	3	3	1	1	1	..	2	..	4	..	..

to another but in the same epidemic, if we are to believe the experience of some authorities—for example, Robertson (1913) writes, "It is evident that the latent period is extremely variable ranging from 6 to 16 days for the onset and 8 to 20 days for the eruption." MacCombie (1899) stated that the interval to onset varies in different individuals between 5 days and 20 or more—usually it is 12 days; but he adds "not infrequently 10, 11, 13 and sometimes 9." He himself saw one as short as 7. The eruption, he said, develops as a rule 48 hours after the onset of the initial symptoms, but he adds, "there are many exceptions to this rule." Immermann (1902) stated that the incubation period between infection and onset lasts generally 10–13 days, or even 15 days; more frequently it is less, 5–10 days. The twelfth day is the most frequent. The eruption, he states, appears as a rule towards the end of the third day of sickness. Variation in incubation periods of the disease in the same epidemic of either variola major or minor must be related to the idiosyncrasy of individuals or to dosage of infection as affected by close or casual contact. The shorter the incubation period of the disease the less likelihood will there be that vaccination will develop sufficient protection in time to prevent infection. The fact that occasionally an individual may react poorly as regards the production of protection must also be taken into account.

It is only reasonable therefore to expect that a person may not be fully protected even if vaccinated on the day of infection, and the statement that vaccination within the first three days will always protect against infection is without justification.

SUMMARY

Numerous observations show that individual animals (calves and rabbits) differ, sometimes widely, in their response to vaccination even with the same lymph. They vary in their susceptibility, and, if vaccinia develops, they may present differences in the character as well as in the number of vesicles or papules which develop. There is evidence that this is also true for man.

The protection afforded by vaccination against an attack of smallpox is subject to variation, both as to the time when it begins to be effective and the period over which it is effective. When vaccination is carried out successfully after exposure to smallpox the development of protection depends on two factors, each being variable—the response of the individual to vaccinia and the response to smallpox. There is no justification for the opinion that vaccination within the first three days of exposure to smallpox will invariably protect from infection; the evidence adduced shows that it has not done so in quite a number of cases. Epidemiological experience has shown that variations also exist as regards the period during which protection against an attack of smallpox is effective. Attention has been focused in this paper on the exceptional cases in which either protection has not developed or has been short-lived. These cases have been stressed in the published work because they have been unexpected; they differ from the strong and comparatively lasting protection usually experienced. They have occurred in various countries and in remote as well as in recent times, even when the technique of vaccination involved the making of three or more insertions of lymph, usually considered to be the most effective procedure. Differences in the protection afforded by vaccination must, I consider, be due in the main to variations in host response to immunisation, because of their widespread occurrence. When vaccination fails to protect against infection by smallpox, its influence in modifying the severity of the disease has not been considered.

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STUDENTS DISCUSS GOODENOUGH REPORT

THE British Medical Students' Association's preliminary discussion on the Goodenough report took place during the recent annual general meeting.

Several speakers were anxious lest there be too great a specialisation in science, and demanded culture as well as clinics. The extramural schools were vehement in their own defence, and denied many of the implications and statements in the report. Discussion on this point became so involved that it was decided to prepare a special statement on their views. Several members referred to the benefits of a tutorial system and were sorry that no mention had been made of its possibilities. There was strong agreement with the principle that teachers should be selected for their ability to teach and not only for their research ability. Staff-student committees were warmly recommended. Guy's dissenting, the association confirmed its repeated suggestion that all schools should be open equally to men and women, and pointed out that any fixed proportion amounted to discrimination and vitiated the principle. The selection of students must be solely on grounds of suitability. Many members considered that a competitive examination at the beginning of a student's course was not a satisfactory guide to his future ability as a doctor. This raised the question of financial help for suitable but poor students, and it was agreed that grants would have to be larger than had been suggested. Grants would have to be made also to hostels and for recreation; if these facilities had to be self-supporting their cost would be prohibitive to many students. A majority of speakers agreed that routine X-ray examination for tuberculosis should be compulsory, since spread in a community depends on infected members. It was pointed out that those who feared that they were infected were often those who objected to examination.

In the discussion on teaching, it was suggested that the best way to study pathology was in clinicopathological conferences, to avoid the subject being considered an end in itself. Members were insistent on the importance of social medicine and the implications of early diagnosis and the prevention of disease. Preregistration house appointments were thought to be necessary for every newly qualified doctor, but a salary of £80–100 was felt to be inadequate. Many speakers hoped that the standard of qualifying examinations would be unified and suggested that only universities should conduct them. The Royal Colleges, it was felt, should confine their attention to postgraduate diplomas and similar qualifications. Apprenticeship to a general practitioner working in a health centre was recommended by one delegate.

Reconstruction

A COMPREHENSIVE DENTAL SERVICE

TEVIOT COMMITTEE'S RECOMMENDATIONS

EARLY last year an interdepartmental committee with Lord Teviot as chairman was appointed to consider how the public can be provided with a satisfactory dental service, how enough dentists can be secured, and how research into dental disease can be promoted.[1] To help the Government in their preparations for a National Health Service, the committee has issued the interim report [2] here summarised. It is unanimous.

PRESENT STATE AND PROSPECTS OF THE DENTAL PROFESSION

Undergraduate education.—There are 5 dental schools in London, 7 in the provinces, 3 in Scotland, 1 in Northern Ireland and 4 in Eire. Before the war close on 400 students entered them annually, of whom about 10% were women. The length of the course for the licence (LDS) is usually about 5 years (including the year spent on premedical subjects), while the degree course (BDS) is rather longer, except in London. Most students take the LDS.

The total expense of training and qualification could nowhere be less than about £800 and it would usually be much higher. Since 1921, 1358 students have had grants or loans from the Dental Board, but these never covered the whole cost and they ceased at the beginning of the war. Very few grants from other sources are held by students.

Postgraduate education.—A limited number of house-appointments are available at the dental hospitals. For practitioners refresher courses have been assisted by the Dental Board since 1923, but in general the demand for them has not been large.

Dental man-power.—At the end of 1942 the Dental Register contained the names of 15,192 dentists, of whom it is estimated that 12,812 were engaged—at least part-time—in dentistry. But the "bona-fide practising dentists" admitted under the 1921 Act are now mostly over 45, and their number is such that a substantial proportion of the profession will be retiring in the next few years. During the war the number of new students has fallen below 300 a year, being about 150 less than the quota permitted by the Ministry of Labour. The Government Actuary calculates that if the number of students qualifying annually were to rise to 400 in the years 1948–52, and to 425 thereafter, it would still be about 30 years before the effective total of the profession would be higher than it was in 1942. "This is an alarming forecast and we have no reason to think it will be substantially falsified unless vigorous measures are taken."

Ancillary dental workers.—Under the Dentists Acts provision was made for unregistered persons to work in public services under the personal supervision of a dentist. No dental dressers of this kind seem to be employed in the civilian services, but the Royal Air Force employ 32 "dental hygienists" on the cleaning and polishing of teeth, and are training 12 more.

Most dentists have surgery assistants; these have seldom had any training except from their employer, and they are not allowed to do any work in the mouth.

Finally, the dental mechanic, who constructs dentures and other appliances, is an essential part of any dental service. There are about 8000 in this country, but arrangements for training are inadequate.

Dentistry as a career.—At present dentistry is unattractive to boys and girls in comparison with other professional careers, especially medicine.

> "We have been told that not a few who take it up do so because there is no room for them in the medical schools. The work itself is apt to appear unpleasant and of restricted scope until its scientific interest begins to be appreciated; and there is, of necessity, little scope for specialisation. Practising dentists feel that their work has not an important enough place in the mind of the public, and in the local authority dental services they complain in many cases of lack of access to the responsible committee of the authority. Many local authorities have no chief dental officer responsible for the organisation and working of their dental services. The opportunities which do exist in the career are not, it is generally felt, made as widely known as they might be, either to parents or to boys and girls when choosing their future vocation. Finally, the training is long and expensive and many parents cannot afford it for their children."

The profession, however, should have a great future if it is enabled and encouraged to progress on the right lines, and its expanded services must be fully utilised in any measures for the improvement of the national health.

EXISTING PUBLIC DENTAL SERVICES

School Dental Service.—Until the recent Education Act was passed, local education authorities were obliged to provide dental treatment for children in elementary schools but need not provide it for pupils attending secondary schools and other institutions for higher education. Not until after the commencement of this war did every local education authority have a school dental scheme.

In 1938 about 70% of the 5 million elementary-school children were inspected; 50% were recorded as requiring treatment, and 33% received it. The acceptance rate (i.e., the proportion of those requiring treatment who received it) was 65·5% and each dentist treated on average 2137 children. In Scotland the number of children inspected annually is believed to be under half the total, the treatment acceptance rate varying from less than 50% to over 90%. A keen education authority with an adequate staff can achieve a high acceptance rate without compulsion: thus at Cambridge, where all children are inspected each year, 75% require treatment and nearly all of these accept it.

Maternity and Child Welfare.—Public provision of dental care for expectant and nursing mothers and for children under school age is in most places extremely meagre. There are signs that the younger mothers are beginning to understand the value of conservative dentistry, but there is a very long way to go.

National Health Insurance.—Roughly two-thirds of the insured population—i.e., between 13 and 14 million people—are entitled to dental benefit, but less than 7% of these claim it each year. The qualification for dental benefit is a prescribed period of membership of an approved society—usually about 2½ years—which can be completed, at earliest, at the age of about 17. Thus the boy or girl who leaves school at 14 has usually no assistance in obtaining dental treatment for those three important years.

It is the common experience in insurance dentistry that people do not resort to treatment until a stage when the teeth are unsaveable and often there is gross oral sepsis.

The services in general.—Dental treatment is also given to hospital patients and the tuberculous, and three London boroughs have municipal dental clinics. "Broadly, then, the picture is of a number of public dental services not closely correlated and each with shortcomings, and of a public ill educated and apathetic in regard to the care of the teeth. This attitude springs we think mainly from a natural fear of pain and lack of any real understanding of the importance of dental health. Economic factors must also contribute, but we are inclined to think that they are of less effect in this connexion than lack of education."

STATE OF THE NATION'S TEETH

The dental health of the population is bad and its effect on their general health is bad.

On an average 90% of men and 86% of women entering the Army and ATS have needed dental treatment on enlistment; 13·4% of the men had essential artificial dentures and a further 10% required them.

1. The members of the committee are: Mr. L. C. ATTKINS, LDS; Mr. F. J. BALLARD, Mr. E. G. BEARN; Prof. R. V. BRADLAW, MRCS, LDS; Prof. R. J. BROCKLEHURST, DM; Dr. T. H. J. DOUGLAS, LDS; Mr. W. KELSEY FRY, MRCS, LDS; Major-General J. P. HELLIWELL, MRCS, LDS; Mr. J. F. HENDERSON; Mr. A. C. W. HUTCHINSON, DDS; Mr. H. T. A. MCKEAG, B DENT SC; Mr. THOMAS RANKIN, LDS; Alderman W. L. RAYNES; Mr. ANDREW SHEARER; Councillor JOHN STEWART; Dame GWENDOLINE TRUBSHAW; Dr. R. WEAVER, LDS; Mr. B. J. WOOD, LDS; and Sir CHAD WOODWARD, FRCS; with Mr. H. F. SUMMERS and Mr. S. G. GAME as secretary and assistant secretary.
2. Cmd. 6565. HM Stationery Office. Pp. 25. 6*d*.

In Cambridge in 1938 only 9·1% of the 5-year-old children examined had naturally sound teeth; on the average each child had over 4 decayed teeth. Of 10,000 Scottish 5-year-olds examined in 1941–43 only 1000 were found free from caries and on the average 7 out of each child's 20 teeth were decayed or missing, about 5 of these 7 being molars. Among 8700 Scottish children aged 6–13 examined in the same period the percentage of sound "first permanent molars" dropped steadily from 82% at age 6 to 20% at 13.

At three large Ordnance factories a sample of the workers was examined. Only about 1% were dentally fit without dentures.

Dental health is an integral part of general health, and dental disease contributes in no small measure to much general disease.

INTERIM RECOMMENDATIONS

A satisfactory service.—The ideal at which we must aim is that people should value the health of their mouths and should seek by every means to preserve it. One of those means will be regular inspection and the treatment of any incipient defects. This treatment should be conveniently and promptly available when demanded, with the minimum of formalities and the maximum of personal freedom; and it should be paid for by the people not as patients but as members of the community.

Progress must be made concurrently on two sides: (1) the stimulation of a *demand* more truly representative of the need for treatment, and (2) the *supply* of an ever more adequate service. It is stated that before the war there was no lack of dentists, over the country as a whole, to meet the actual demand for treatment; but if the demand rose in future to somewhere near equality with the real need then there would be a shortage of dentists unless their numbers had increased pari passu. If, for example, the annual demand rate rose rapidly to 40% or 50% and the numbers of the profession showed no rapid increase, the shortage would be very serious.

> "It may seem ironical that the too great success of one object of policy should be a matter of anxiety with regard to the other; but it is not really so, if viewed realistically. A man who drives two horses in a race must drive them approximately at the same rate if he is not to be upset; but subject to this, he must drive them both as fast as he can. That is our object—to keep demand and supply in a rough equality, but still to make the quickest possible progress in both. And the analogy will go a little further still; for just as one horse helps the other forward, so, we hope, will a greater demand for dental treatment encourage recruitment to the profession, and conversely a well staffed service will undoubtedly stimulate the demand."

A comprehensive service.—The greatest single step forward which could be made now is to accept the principle of a comprehensive service—a service which, while perhaps not yet wholly adequate, will be equally available to all who demand it, and which will be paid for by the community as a whole.

> Of the two factors depressing the public demand for regular dental care, "the greater is, in our view, lack of appreciation of the importance of dental health and the lesser is lack of means. It is idle to seek to remove the first until the second has been removed; therefore, as a beginning we want to 'divorce dental health care from questions of means' and thus begin to build up the demand: then can come the steadier and longer process of increasing public enlightenment about dental health."

Dentistry is not an adjunct but an organic part of health; so it is important to the success of the health service as a whole that dentistry should, if possible, form an integral part of it on a comprehensive basis.

> "A comprehensive scheme, if it is framed and administered in a satisfactory way, will offer to the dental profession itself the best opportunity of attaining its rightful place in the public estimation. This is not the justification of the proposal; but it is an important consideration because it involves the reasonable expectation, if true, that young men and women will adopt the career of dentistry in sufficient numbers to make the scheme a success. Plenty of work, adequate remuneration, good conditions of service and the knowledge that dentistry is making an essential contribution to national health, will be, in our view, the best ways of encouraging recruitment to the profession, and securing that ready coöperation which must be the foundation of any satisfactory dental service."

On the other side of the medal is the question, Can it be done? Will there be at any time such a demand for treatment that the service available at that time will be hopelessly inadequate, and the scheme be thus discredited?

> "On a careful review of the probabilities we recommend the institution of a comprehensive dental service from the outset. We confess that we cannot regard some temporary excess of demand over supply with any undue anxiety—for what would it mean? It would mean that demand was coming closer to an equality with the true need; it would mean that much more was being done for the dental health of the people than ever before; and it would, we believe, soon bring an expansion in supply."
>
> "We have already quoted the Government's words that health care should be divorced from questions of personal means; to this we subscribe, and we cannot see that if there were a certain shortage of dentists those words would become untrue. If there should be a shortage, let it be shared by all. We therefore recommend that when the National Health Service is inaugurated, a comprehensive dental service should form an essential part of it. The possibility of temporary and local shortages should be frankly accepted and stated; the position would, we think, be willingly accepted by the public for the sake of a scheme of comprehensive scope."

The committee is not yet in a position to give its conclusions on the important question whether any dental work should be delegated to ancillary workers.

Special classes.—There are certain classes of the community who stand particularly in need of dental care and who can benefit in a special way from it.

> "We have received a great deal of evidence in favour of a concentration of effort on the dental care of (*a*) expectant and nursing mothers, (*b*) children and (*c*) adolescents. There are already ... public services ... which go some way towards meeting the needs of these classes. ... Our concern is not to dispense with these services, nor to regard a general service as a substitute for them, but rather to strengthen and improve them by all practicable means; they must form as it were the sharpest point of attack of the dental force of the country upon dental disease."
>
> "We express as strongly as we can the hope that employers will give their workers, and particularly the adolescents, time off without loss of pay for dental treatment. ... The provisions of the Education Act will result we trust in more and more adolescents coming within part-time contact with education authorities. We would stress that in their case too, the authorities should take their responsibilities in respect of dental care very seriously, otherwise much previous expenditure of time and money may be thrown to the winds."

Position of dentist in public service.—It is of very great importance that dentists working in the public dental services should have cause for satisfaction and pride in their work. There should be no compulsion on any dentist to enter the public service; any dentist should be free to engage either whole-time or part-time in the service or any branch of it; and the patient must have free choice of dentist. The proposals are not intended to interfere with the free right of everybody to seek his dental advice and care through private arrangements. "Our object is a service equally available to all, but not compulsorily imposed upon any."

General dental practitioner service.—This is envisaged as broadly analogous to that of a general medical practitioner service. "We recognise of course that a great part of the population today have no such relation with a dental practitioner as is conveyed by the term 'family dentist'; but it must be an object of policy to encourage the development and growth of such a conception."

Health centres.—Dental health centres will undoubtedly provide facilities for teamwork, and it may well be that in certain localities they will effect economies in dental man-power and equipment. Such centres should be established experimentally in suitable areas.

"There should be local consultation with the profession not only as to the development, siting and size of these centres, but also as to their internal arrangement, design and equipment. They may be either separate or (preferably) a part of the general health centre where other kinds of care are received. We share the desire of the Incorporated Dental Society to see the services of dentists included wherever possible in health centres set up for the purpose of providing medical and surgical treatment. We see no reason why the dentists employed by local authorities should not operate in these centres; on the other hand we contemplate that they will mainly be staffed by those who elect to come into the 'general' service."

Specialist services.—The aim should be to make available all necessary facilities for special diagnosis and treatment.

Coöperation and coördination of services.—The comprehensive dental service will be made up of several elements—the general service and the service for special classes, the separate practice and the group practice in dental health centres—and it is important that these several elements should be a source of strength to one another. "Moreover it is in our view essential that full use should be made of the expert guidance of dentists in the planning and administration of the service, both centrally and locally. Further the body with whom practitioners in any general dental practitioner service are in contract should be a dental body."

Dental health education.—Short-term publicity methods are not likely to make the public appreciate the need for regular inspection and treatment of the teeth, let alone develop a more positive or preventive attitude to oral health. What is wanted is a steady policy rather than a campaign, and by far the most important item is the quality of treatment given to the public.

"We do not wish to separate dental from general health education; the one is a sentence on the page of the other. But we are anxious that that sentence should not be crowded out; rather than that, we would have it given a page to itself."

Additional recommendations.—Every possible step should be taken to encourage suitable ex-Service men and women to take up the profession of dentistry. The further education and training scheme of the Ministry of Labour should be interpreted liberally in the case of intending dentists, so that, for instance, an ex-Service man or woman who had not begun a dental training or who had even pursued some other vocation before the war should, if he or she is a willing and suitable candidate for the profession, receive the maximum assistance.

It is imperative that dental teachers should be quickly restored to their peace-time callings. "The public dental services will demand a greatly increased entry to the profession, and our final report will contain our recommendations on this and kindred topics. The immediate point, however, is that the first need in order of time is for the adequate staffing of dental schools so as to cope with the anticipated postwar student-entry. The schools are understaffed at the present moment to a serious degree: if they remain so after the war, the situation as regards dental man-power will deteriorate progressively."

"ALL CAREFULLY PACKED."—When delicate instruments and drugs have to be sent overseas into hot countries their value on arrival depends largely on the skill and ingenuity of the firm which packs them. At the Anglo-American Services exhibition on preservation and packing for the tropics, at the Central Ordnance Depot, Feltham, Middlesex, a section devoted to medical and surgical materials and equipment shows some clever ways of defeating the attacks of damp and heat. Penicillin, for example, before transport abroad has to be almost completely dehydrated; in that state it is hygroscopic, so it has to be packed in bottles with rubber diaphragms through which distilled water can be injected when the time comes to prepare the solution. Each diaphragm is protected by an aluminium disc and two aluminium caps, and the bottles are packed in boxes, which in turn are packed in waterproof bags, and nailed up in wooden boxes. Similar thought has gone to the packing of plasma, serum, various kinds of tablets, plaster-of-paris bandages, and iodine swabs.

In England Now

A Running Commentary by Peripatetic Correspondents

OUR village is busy on work of national importance. Other places may make tanks, guns or aeroplanes, but this is total war and we are engaged on an even more vital occupation—the mass production of babies. Under an official Government arrangement the manor house is packed with expectant mothers patiently awaiting attention, our streets and places of entertainment are crowded with women showing that globular form so pleasing to accoucheurs, and every house of the district can show its samples of our finished product, billeted by instruction of the ministry and apparently wearing well. Raw material flows in by a frequent service of special buses from London and the whole life of the village centres round that house by the wayside where 24-hour production is maintained by shifts of midwives.

Our chief and his staff may shortly be giving evidence before the Royal Commission on Population and the results of our research will doubtless find a prominent place in his report. We can produce incontrovertible evidence that the number of illegitimate births in any district is in inverse proportion to the square of the distance from the nearest military establishment; that there is a perfect correlation between the birth-rate and the shortage of midwives, a reduction in the number of midwives being always accompanied by a rise in the birth-rate; and, perhaps most startling of all, that the elopement of a midwife will precipitate the immediate simultaneous delivery of every expectant mother in her area. The application of these discoveries in the national campaign for a bigger population will need consideration but the brilliant mind of our senior accoucheur has directed us to one solution. The other day a mother who had just been delivered of her third BBA in the heart of rural England wrote and told us that in future we need not bother to send a midwife as her husband, David, the cowman, "is such a good midwife because he is good with cows," and should we require a midwife she could recommend him with confidence. Now, my dear Watson, the birth-rate varies in inverse proportion to the number of midwives, therefore abolish midwives and appoint experienced cowmen in their place and the population will immediately increase. Think of the good old days of the eighteenth century when William Smellie was appointed "man midwife extraordinary"—the most prolific years in the history of the nation!

* * *

One of the most therapeutic agents that I know in cases of protracted or chronic illness is an aquarium. Caterpillars and mice in cages are good too, but the difficulty of obtaining food plants and their gentle aroma are drawbacks. "Just looking at them, you mean?" says Pooh-Bah. I used to be rather overawed by Pooh-Bahs and pretend that I was studying these lowly companions, but now that I am within measurable distance of the dust I am frank. "Yes, P. B." I say, "the number of man-hours—since these became differentiated from beast-hours—that have been spent in contemplating, brooding with or gloating over such is at least a million times more than those spent with the written word, and out of habit they bring balm to the soul." He goes away muttering, "Little things please ..." and tapping his head, and indeed that is where the trouble lies. I have been an habitual brooder all my life. A long series of pets in boyhood whetted an appetite which I found hard to assuage when I first became a student in "digs." I even had to resort to an earthworm taken from the lab, and feed it on mud from returning football boots. I was romantic in those days. "My dear Sir and Madam," I would say, "my hermaphroditic dear, it was I who rescued you from a formalined death!" Later the establishment grew to about thirty aquaria. Then when I went to sea the abstinence symptoms came on again and I kept cockroaches and bed-bugs. I was never seasick, but 16 years did not cure me of homesickness, and I used to have lone ecstasies of it in my cabin, contemplating seeds germinating in a pot of earth from the garden at home. No-one who has not communed with root-hairs can realise the vast neighbourly contact of the animate with the inanimate world, a penetrating intimacy that the brooder himself is seeking with less specialised forms of life. Came chains of

chameleons, gekkos, scorpions, fire-bellied toads, ant-lions, but I think the most soothing of all are the sub-aqueous brethren. There is something in the attitude of a fish or the aloof gliding of a planorbis snail that takes one back to prehuman times. I confess that considering the number of hours that I have brooded on these fellow creatures I am singularly ignorant about them. For this winter I have got as well as an aquarium a few White Admiral larvæ in their hibernacula and a large pot of earth on the surface of which about 50 little wild cyclamens are fattening up their baby corms. I shall drop in between surgeries and rounds for a brood with them in the same way as the religious slip into a cathedral or the less religious in for a quick one. Last summer I was brooding over a squirming mass of gentles, romping like playground children, when Pooh-Bah came and looked over my shoulder. He went quite pale. "Disgusting!" he hissed, and hurried away. Till then I had never spotted the inner motive of Pooh-Bahery. Some time ago a brother peripat recorded how his infant son lost his recently acquired control of bladder when contemplating the chickens. How well do we brooders know that feeling of wonderment and content and relaxation, but nowadays our libation is poured out in words. For in these small lives we do not first seek knowledge, though in them lie secrets beyond the knowledge of man, but as acolytes we glow with the content that comes from watching mysteries. The Pooh-Bahs may laugh and rage together, but in their mocking is a horror of their coming home. But they who wonder at these things, where shall they find fear?

* * *

Believe it or not; I found the following scribbled on an evening paper picked up in a railway carriage. It is what is called, I am told, a "Triolet" and was written apparently apropos a paragraph carrying a picture of Dr. Charles Hill, complete with pipe, and headed (the paragraph not Dr. Hill) "Three Children per Marriage are Necessity—says Radio Doctor":

TRIOLET

"Three kids? That's a lot
My dear Doctor Hill
Food and clothes to be got
Three kids: That's a lot:
And for each tiny tot
The Stork has a *bill*
Three kids? That's a lot
My dear Doctor Hill."

* * *

He's a good hand, and there was no doubt of the severity of his pain—it had flattened him out completely. I had just been woken up, and there was just enough motion to discourage clear thinking. The fear is sometimes father to the thought and the more I looked at him the more he looked like a perforation. The prospect of this filled me with acute terror. Admittedly, his abdomen was not absolutely board-like, but I had never seen a perforation fifteen minutes old, and it might develop any moment. I sat down and tried to be calm and dispassionate. Thirty-six hours to port—my God, I should have to sew it up. At this I all but perforated myself; I distinctly felt my acid curve climb off the chart. And I had used nearly all my ether for cleaning—no virgin ever felt so foolish. And what if I opened him and couldn't find the perforation? This was clearly the occasion for it to be round the back, or somewhere. Even the thought of a *Daily Mirror* write-up couldn't console me now. I prayed for a sign to guide me in my hour of trial and tribulation. Fearfully I looked again. My prayer was answered. He had done a thing I felt no self-respecting perforation would do. He had fallen asleep.

* * *

In the shed in which we store our all too meagre supply of corn there are unwelcome mice for which we set break-back traps. Yesterday we had a success—one thief lay dead in the trap and beside it lay another squatting apparently uninjured but no less dead. Do mice die of fright or was it just another case of coronary embolism? No post-mortem was done.

Mr. THOMAS STOWELL has been re-elected to the council of the Industrial Welfare Society of whose advisory medical committee he is chairman.

Parliament

ON THE FLOOR OF THE HOUSE

MEDICUS MP

THE House has adjourned for a week and the new session will open on Wednesday, Nov. 29, with the King's Speech. It is expected that there will be about a week's debate on the speech, in which any topic of general policy may be raised. This will leave some time free before Christmas in which progress may be made with social legislation. What will happen to the National Health Service proposals is not yet certain, but if the insurance proposals are to have a real meaning the National Health Service must also be put into legislative form before this Parliament ends. To leave the medical service proposals to the hazards of an election, now that they have got to the present stage by the process of inter-party agreement, would not assist their calm and judicial consideration.

Last week interest centred chiefly on the partial demobilisation that is to take place between the defeat of Germany and the final defeat of Japan. How long this period will be it would be hazardous to say. But recent Japanese successes of the mainland of China and the possible opening of a Japanese land route from north to south in China do not promise any quick ending of the struggle. We may go on all of 1946. In the interim, however, we shall be turning away from war production in this country to peace production, and more consumers' goods—pots and pans, clothing, furniture and household necessities—will gradually become available. A fortunate pointer to the greater availability and freedom of our shipping was given by the Prime Minister's announcement of a plan to give overseas Service-men in Italy, the Near East, the Far East and East Africa spells of leave in this country which they badly need.

As far as the doctors and dentists in the Services are concerned the demobilisation plans do not promise any early relief. They are based on the two factors of age and length of service, no consideration being given to foreign service. Although in the debate special consideration was suggested for men who have been wounded or suffered serious illness, no promise of this was given. The fact is we are in the grip of a problem of man-power which needs very careful handling. And medical man-power is one of the difficulties. The application of the general demobilisation rule of age and length of service means slow demobilisation for doctors. The situation may be eased when we know the composition of the forces which will be engaged in the war against Japan after the German defeat; that is, how far France will contribute, how far the Netherlands, and how far the United States. Australia and New Zealand are in any case in the Pacific war at present and will of course continue. But it may be necessary to devise special measures to relieve the pressure on British medical man-power if the needs of the civil population of this country, turning again to peace production, are to be met adequately.

An encouraging announcement in relation to the extent of our war preparation was given by the Secretary of State for Air. The Joint Air Training Scheme in Canada, which has been of such immense value to the whole Allied war effort, is to be discontinued from the end of March, 1945. There is to be also a reduction in the parallel scheme carried out in South Africa and in Southern Rhodesia. Skeleton staff arrangements will remain after March in case of any unexpected and unanticipated turn in the fortunes of war. But Allied air superiority is now so great that we have reserves of man-power in hand which are calculated to be enough to meet all contingencies to the end of both the German and the Japanese wars. The best side of this is the great reduction in the casualties of the RAF.

The Prime Minister's report on the terrorist assassination of Lord Moyne, the number arrested, the stern words used, are however a painful reminder that the postwar world will still be full of grave problems. The agony of Europe, of the Middle East and of the Far East will leave a trail of "rehabilitation" problems which will tax all the resources of civilised mankind. What our immediate contribution to these tests is to be will be revealed in the King's Speech.

FROM THE PRESS GALLERY

Demobilisation of Doctors

ON Nov. 5 in the debate in the House of Commons on the Government's plans for a reallocation of manpower between the armed forces and civilian employment at the end of the war with Germany, Lieut.-Colonel J. D. PROFUMO asked whether there would not when peace came be a growing need in this country for doctors and dentists. In his reply Mr. E. BEVIN said it was proposed to relieve doctors and dentists by age and length of service in accordance with the general scheme. But Dr. HADEN GUEST thought the Government should give special consideration to this problem. He did not know how they were going to release any large number of doctors. If the Government would look at the statistics, which Dr. Guest as a member of the Central Medical War Committee knew well, they would find that the numbers of doctors in the Services were large—larger than those of practically any other profession. The proportion of doctors in the Services, he went on to say, was higher than the proportion of miners or building workers. There were not enough doctors to make their release on the lines laid down in the white-paper possible. More doctors would have to be obtained, and unless plans were laid to bring forward new doctors more quickly and to obtain other doctors for the civilian population, it would be impossible to tackle this question. Dr. Guest said that he knew one district where there were three doctors now in civilian practice. Two of them were between 75 and 80 years of age, and the third was 80. He was sure that these doctors would go on working as well as they could, but their period of service was drawing to its close and clearly some relief would have to be given to them.

Dr. HADEN GUEST also asked whether due weight would be given to sending men home who had been exposed to tropical diseases in the Far East. Mr. M. S. MCCORQUODALE, in winding up the debate, said he was sure that the authorities would give proper attention to compassionate and medical cases. Thought and care had been devoted to this demobilisation plan, and he was confident it could be carried through to the satisfaction of our men and women in the Forces.

Social Insurance or National Insurance?

When the Ministry of Social Insurance Bill was considered in committee in the House of Commons on Nov. 14, an amendment moved by Mr. M. PETHERICK to change its title to Ministry of National Insurance Bill was carried by 170 votes to 89. The bill passed through committee and was read the third time, and on the following day passed through all its stages in the House of Lords.

QUESTION TIME

Welfare Food Schemes after the War

Major S. F. MARKHAM asked the Minister of Food whether, in connexion with social insurance, it was proposed to continue in the postwar years the arrangements by which pregnant women, nursing mothers and children up to school age could obtain essential supplies of milk and vitamins.—Mr. W. MABANE replied: No change is contemplated in the welfare foods schemes so long as food shortages continue and consumption of liquid milk by the general public is restricted. Consideration is being given to the best means of ensuring that the special needs of children and pregnant and nursing mothers will be met when liquid milk and other essential foods are again in ample supply.

Mediterranean Sick Camps

Mr. W. WINDSOR asked the Secretary of State for War whether his attention had been called to the conditions prevailing at wounded and sick camps in the Central Mediterranean area.—Sir JAMES GRIGG replied: A letter published in a Sunday newspaper related to one particular convalescent depot and investigations show that even at this depot the conditions described were by no means general. Its location was not entirely suitable for occupation during the winter, but for military reasons it could not be moved as had been intended. Steps were taken to prepare it for the winter, but before this could be done torrential rains set in much earlier than had been expected. The majority of tents are dry inside. Defective tents are being replaced as soon as possible. A tent has been erected to protect those waiting for meals. A drying shed is available and there is an ample reserve of spare blankets. The scale of beds normally available for a convalescent depot is being supplemented by the construction of bunks. Each individual not provided with a bed received a groundsheet. A complete issue of gas capes has now been made. No large buildings are available, and the area has been heavily bombed. There is apparently no suitable permanent accommodation which is being occupied by Italians.

Domestic Staff for Hospitals

Replying to a question Mr. ERNEST BEVIN said that during the period of the heavy "flying-bomb" attacks, the London hospitals evacuated many of their patients and their staff demands were much reduced. In the last two months these demands again became urgent. This coincided with the need to provide domestic staff for the hostels for building workers brought into London. Even during this difficult period the hospitals were not neglected and in the past two months 63 cooks, 756 full-time and 115 part-time domestic workers and 163 orderlies, porters, stokers and maintenance men were placed. Now that the staffing of the building workers' hostels is almost completed he hoped that it would be possible to make further progress in meeting the demands of hospitals which will enjoy first priority for the supply of domestic labour.—Mr. E. H. KEELING: Does not the Minister agree that it would be a great calamity if beds had to be closed owing to lack of staff, and does he hope that he will be able to avoid that?—Mr. BEVIN: I think so; I am pressing on with it, but I would make an urgent appeal to the voluntary hospitals in London to introduce a little more up-to-date personnel management. It would help me enormously if their staffing measures were not so antiquated.

Veterinary Education

Replying to a question Mr. T. WILLIAMS, parliamentary secretary to the Ministry of Agriculture, said that the Minister of Agriculture and the Secretary of State for Scotland had already set up a committee to inquire into the extent and effect of veterinary practice in Great Britain by persons who were not registered. Consultations with the Royal College of Veterinary Surgeons and the various institutions concerned with veterinary education were taking place, and Mr. Williams hoped that the recommendations of the Loveday Committee would be found to be generally acceptable, but pending the result of these deliberations he was not able to announce what further steps would be taken to implement the recommendations.

MEDICAL SUPPLIES FOR SLOVAKIA.—Mr. LAW announced that medical supplies have recently been despatched to Slovakia.

MILK USED FOR MANUFACTURE.—On Nov. 15 Colonel LLEWELLIN said that in the previous week 126,200 gallons of milk were manufactured in Great Britain. They were used for the production of priority foods only.

BLIND CHILDREN.—Mr. WILLINK gave the number of children under one year of age registered in England and Wales as blind on March 31, 1938 and 1943, as respectively 11 and 13.

REHABILITATION CENTRES FOR WOMEN.—Mr. BEVIN is ready to consider the provision of industrial rehabilitation facilities for women as soon as the need arises.

YELLOW FEVER INOCULATIONS.—Mr. A. V. ALEXANDER stated that the right of officers and men of the Royal Navy and Royal Air Force proceeding to Gibraltar or Africa to refuse inoculation against yellow fever had not been withdrawn.

A ROOF OVERHEAD.—In London the Cecil Houses, blitzed, restored, and blitzed again, continue an adventurous fight against the powers of darkness. Every night the houses at Boswell Street, Harrow Road and Waterloo Road are open to homeless women. The Wharfdale Road House, blast-shaken, had to close down just as Boswell Street reopened. Every night the three houses are filled. The guests arrive in the evening and leave in the morning after breakfast. Each pays 1s., for which she gets a hot bath, a good bed, and facilities for washing her clothes and for cookery; if she brings a baby she can have a cot for an extra 3d. At each house the matron keeps what stock she can of shoes, stockings, underwear and warm clothing for those who need them; and the Christmas parties every year are famous. In normal times Cecil Houses, once established, are self-supporting, but nowadays expenses are many and unforeseen. Gifts of clothes, or donations, may be sent to Mr. S. T. T. James, 193, Gower Street, London, NW1.

Letters to the Editor

PENICILLIN IN ACUTE NEPHRITIS

SIR,—A recent experience prompts me to suggest that a valuable use of penicillin may be in the treatment of acute hæmorrhagic nephritis in children—and possibly in adults. It is well known that in children the disorder of the kidney frequently follows or is associated with an infective focus, especially in the upper respiratory tract, including the middle ear. The hæmolytic streptococcus is a common infecting organism in such cases, but the use of sulphonamides if and when the kidneys are inflamed is contra-indicated. Penicillin however has no such drawback and if the infective focus can be quickly brought under control by its use it seems reasonable to hope that the damage to the kidneys may be minimised. I am aware of the general good prognosis in this acute form of inflammation of the kidneys in children; but no-one can predict in the early stages whether or not the child is going to be in the fortunate class, and a minority do badly, passing on sooner or later to chronic and incurable forms of the disease. I am also aware that the primary focus of infection may have largely passed its acute inflammatory stage before the kidney involvement appears, and in such circumstances penicillin can hardly be expected to do as much as when the tonsillitis or otitis media, for example, is contemporaneous with the nephritis. But even in these cases the certain elimination of any smouldering sepsis should help to limit kidney damage. A single observer's experience with this disease is limited and I am anxious that the suggestion contained in this letter shall receive some extensive trial. Otherwise I would not have the temerity to "rush into print" with a single observation, and I have purposely refrained from giving any details of a solitary and successful case.

Middlesex Hospital, W1. ALAN MONCRIEFF.

BEDS FOR TUBERCULOSIS PATIENTS

SIR,—On Oct. 21 under this heading you summarised a debate in the House of Commons on a motion by Sir Waldron Smithers concerning the treatment of tuberculosis in Kent. In an account of the circumstances in which a certain patient was admitted to hospital, strong criticism of myself as administrator of the tuberculosis work in the county was implied. In order that this matter may be properly understood, I would like to comment briefly on this report. While criticism of my behaviour is of no interest to your readers, important principles are involved which concern all whose duty it is to carry out public health administration. The facts which I shall give are not in dispute.

A patient was sent by his doctor to hospital for radiography of his chest. The doctor was told that the appearances were suspicious and consequently referred him to a tuberculosis officer on my staff. Pulmonary tuberculosis was diagnosed and the patient was placed on domiciliary treatment, his name being put on the usual waiting-list for admission to a sanatorium. Unfortunately, at the present time, owing to the length of the waiting-list, a long delay is unavoidable. During this period neither the patient's wife nor the doctor asked the tuberculosis officer to call.

After about six weeks, Sir Waldron Smithers, in whose constituency the patient resides, asked me for information as to the position, since the patient's wife had complained to him. I gave Sir Waldron Smithers a very full report; but it transpired that after visiting the patient he had succeeded by direct telephone contact in getting the patient forthwith into a London voluntary hospital. Here it should be noted that the same hospital on three separate occasions previously had refused formal application from me for reception of tuberculous patients, and had placed their names on a waiting-list.

In addition to this interference with normal procedure, Sir Waldron Smithers took the unusual, and in my opinion regrettable, course of entering into correspondence with me and also (unknown to me) with one of my tuberculosis officers, at the same time, in regard to the same patient.

In the House of Commons Sir Waldron Smithers quoted from my letters one or two sentences out of their context, suggesting that I had little sympathy with the sufferings of the tuberculous and allowed officialdom to interfere with prompt treatment—because I had said that a tuberculosis officer dealing with one particular area would not be in a position to speak on the council's policy regarding tuberculosis in the county as a whole. In general, a more accurate and fairer statement of the facts of the case was given by Miss Horsbrugh in her reply to Sir Waldron Smithers.

The facts as regards tuberculosis in Kent have been frequently and fully reported to the public health committee. The Ministry of Health is aware of the position, and to the best of my belief everyone concerned has done everything possible to alleviate a situation which is everywhere recognised as deplorable. It is, however, a national problem, not in any way confined to this county; and until young women can be persuaded to come forward to be trained as tuberculosis nurses, long waiting-lists will continue, and, owing to delay in isolating the infectious, the circumstances will be likely to deteriorate.

Maidstone. CONSTANT PONDER, County Medical Officer.

CONGENITAL SYPHILIS WITH OBSCURE INITIAL SIGNS

SIR,—While Dr. Lapage does well to draw attention to the increase in the incidence of congenital syphilis, I feel that the symptoms described in his note of Oct. 14 ought to have awakened the suspicions of the practitioners who referred the cases to him. Cases 2 and 3 both had typical dermal histories. Cases 1, 4 and 6 showed Parrot's pseudoparesis, and radiography of the epiphyses of the joints concerned no doubt would have confirmed the diagnosis as effectively as the Wassermann reaction. In an infant a history of inability to move the limbs should always suggest three possible diagnoses: obstetric paralysis, the osteochondritis of congenital syphilis, or Barlow's disease. Enlargement of the liver is noted in some 20% of all cases of congenital syphilis, but depression of the bridge of the nose cannot be diagnosed with accuracy under the age of 6–12 months, and is almost always preceded by bloodstained snuffles.

The fact that the mothers of Dr. Lapage's cases "were apparently normal during pregnancy" is a strong plea for the routine elimination of the possibility of syphilis in the expectant mother. When one case of syphilis is detected, examination of the remaining members of the family is the only certain method of discovering asymptomatic cases. It is still not generally realised that the average infant, infected in utero, is apparently normal at birth: evidence of infection is seldom observed before the second week of life. The death-rate in the present series—3 out of 6—seems unusually high. In treated congenital syphilis it need not, as a rule, exceed 5%.

I would suggest that routine examination of the infant's cerebrospinal fluid is not usually necessary, and may even be dangerous. The blood Wassermann reaction, and X ray of long bones, usually give the answer. I would also suggest: (1) That the index of suspicion should be high, particularly in diseases of infants; (2) that a more adequate standard of undergraduate and postgraduate instruction in this subject should be universal; and (3) that the possibility of syphilis should be excluded in *all* expectant mothers—this should be a statutory obligation, not a matter for the individual medical conscience as at present.

Bristol. DONALD D. BROWN.

FATTY STOOLS AFTER DYSENTERY

SIR,—All will agree with the statement in your annotation of Nov. 11 that transient sprue-like symptoms fairly often follow infections of dysentery type; but it is rather problematical that the "explanation of the steatorrhœa seems to lie not so much in damage to the intestinal mucosa as in the rapid passage of the intestinal contents and consequent failure to absorb the vitamins and other substances necessary for the complete metabolism of fats." It is true that no definite damage of the intestinal mucosa has so far been found in sprue conditions; the occasional finding of thinning of the mucosa, or small scattered ulcers, is held to be a sequel. But flatulence, dyspepsia, loss of weight and energy, and

increased fat content of the stools are often present in sprue many months *before* the onset of diarrhœa. Furthermore the gravity of the steatorrhœa is by no means proportional to the number of daily motions. Other and more complicated factors seem to be responsible for the failure of the jejuno-ileal function, as is evident from my recent review of the implications of modern physiology and pathology in relation to this condition.[1]

The syndrome attributed to deficiency of the vitamin-B complex described (mainly in America [2 3]) as consisting in anorexia, flatulence, loss of weight, diarrhœa, nervous irritability, and a characteristic derangement of motility and mucosal pattern on X-ray examination, seems also to indicate that rapid passage of intestinal contents cannot alone be responsible for the steatorrhœa. The American authors have specially underlined that none of their cases showed steatorrhœa, and this coincides with my experience in similar cases. The frequency of this condition has been considerable in this country in recent years. The patients are mostly otherwise healthy people with a good medical history. On searching for a cause it is tempting to select such factors as overwork, anxiety, monotonous and vitamin-poor war-time diet, and overloading with starchy food. But these cases had become common in the United States during 1939–41, at a time when unemployment had disappeared, good food was available for everyone and anxieties were remote.

In view of the work mentioned in your annotation, on the possible conditioning of B-complex deficiencies after the use of sulphonamides, it may be worth considering the possible influence of injudicious use of sulphonamides (not only sulphaguanidine and sulphasuccidine) on similar abdominal conditions, and to follow up a certain number of cases more closely.

London, W1. Z. A. LEITNER.

MALIGNANT MELANOMA

SIR,—We feel that the paper by Dr. Margaret Tod in your issue of Oct. 21 under the sensational title "Tragedy of Malignant Melanoma" should not be allowed to pass without criticism. The fact that this article was quoted by the *Evening News* cannot of course be held against Dr. Tod, but the authority of the Holt Radium Institute for the statements, which is implied by the newspaper, may well lead to alarm and despondency on the part of the public. The unfortunate statement that "six patients died as a direct result of meddlesome and incompetent treatment," besides being discourteous to the profession to which Dr. Tod belongs, is more than likely to destroy the confidence which many of us find so helpful to our, not always unsuccessful, efforts to relieve the sufferings and discomforts of our patients.

While we sympathise with Dr. Tod's evident indignation at what she calls "inefficient," "careless," "incorrect" as well as "meddlesome and incompetent" treatment, we envy her certainty of the correctness of her own advice and methods. Perhaps the somewhat sheltered atmosphere of an institutional appointment has narrowed her outlook. She has, we think, omitted several important facts which might help to get a better perspective of the frequency of malignant melanoma, at least in respect to other conditions. She says that "during the last three years 74 such tumours (malignant melanomata) have been seen at the Holt Radium Institute," but she does not state the total number of cases, let alone those of other skin tumours, seen at the same institute over the same period. Needless to say, she does not even hint at the number of moles, usually called "cellular nævi," seen; as we all know so well, they would be as the sands of the sea, without number. She writes that "malignant melanoma is not a common tumour"; we would say that it is an exceedingly rare one, but figures such as we have indicated might have gone some way to prove her right.

We agreed with Dr. Tod's admission that "malignant melanoma may be very difficult to diagnose"; indeed we should have said that, before metastasis, it is impossible to diagnose the malignancy, with the necessary certainty, without histological study. How this study is to be made without excision she does not say. We have also been told, not once but many, many times, by patients, that discoloured moles were growing in size; and yet, on histological study, have found them to be cellular nævi without any evidence of malignancy.

Under Dr. Tod's heading "Possible Lines of Treatment" we are in entire agreement with her paragraphs 3 and 4. We also agree with her statement in paragraph 2 that "if there is no doubt that a lesion likely to be a melanoma is growing, treatment must be radical" and that "surgery is the first choice." In our view such surgical excision would be better done by diathermy, for this blocks the lymphatics and other vessels and so helps to prevent metastasis, if that has not already taken place.

We do not agree that "irradiation to the highest degree which can be tolerated offers a useful alternative" to surgery. It is generally accepted that malignant melanomata are not radiosensitive, and our limited experience of this rare tumour, over a period of more than 20 years, both in hospital and private practice, supports this view. It should not be forgotten that the appearance of an X-ray or radium atrophy is disfiguring and that radiodermatitis is potentially epitheliomatous.

Dr. Tod holds that even benign moles should not be removed or treated in any way; if the patients insist, they should be submitted to operation, and any question of cosmetic result "must not influence the surgeon in planning his excision." We do not agree. We would also challenge the statement in paragraph 1 that "it is never justifiable to remove, for cosmetic reasons, a pigmented lesion which shows no sign of active growth." In true malignant melanomata biopsies of excised lesions have revealed malignancy, however early the growing lesion has been seen, and it is unfortunate and not true to ascribe its malignancy to any therapeutic procedure. Surely a simple excision, or even one or two applications of carbon-dioxide snow, cannot be regarded as carcinogenic factors. The statement we have criticised is the implication that the malignancy of these tumours is in any way the result of injury or "injudicious treatment."

It is well known that consciousness of a physical deformity may seriously interfere with a patient's ability to earn her or his living, and may (often does) make them morbid and introspective—in fact may spoil the whole of their enjoyment of a normal life. This is a humane and practical outlook and should in our view be given at least serious consideration in moderating such drastic advice as is recommended.

J. E. M. WIGLEY.
London, W1. R. T. BRAIN.

PERINEAL EXCISION OF THE RECTUM

SIR,—It is well known that after excision of the rectum the large cavity necessarily left takes a considerable time to heal and a persistent sinus commonly remains. In my last case union was complete in ten days, and there was a striking difference in the patient's condition compared with previous cases.

After the usual Lockhart-Mummery excision the whole raw area was powdered with sulphanilamide and the usual oiled silk and gauze pack inserted, most of the skin incision being closed. At the end of three days, under gas anæsthesia, the pack was removed and the whole of the cavity found to be remarkably clean with no pus at all. The remainder of the incision was therefore closed and two small tubes were inserted to the depth of the wound; through these was instilled 5 c.cm. of penicillin solution containing 100 Oxford units per c.cm. twice daily. At the end of another four days the tubes were removed, the wound appearing soundly healed. At no time was there any pyrexia, local reaction or discharge of pus, and at the end of ten days the stitches were removed as for a primary healed wound. Throughout the whole of this time the patient was in extraordinarily good condition, taking full diet and behaving quite differently from patients normally subjected to this operation.

Halifax General Hospital. H. I. DEITCH.

1. Leitner, Z. A. *Trop. Dis. Bull.* 1942, **39**, 497.
2. Lepore, M. J., Golden, R. *J. Amer. med. Ass.* 1941, **117**, 918.
3. Mackie, T. T. *Ibid*, p. 910.

NATIONAL UNIVERSITY OF IRELAND.—Prof. Thomas Walsh, MD, has been coöpted to the university senate.

Obituary

WALTER MARTIN ASH

OBE, MB LOND., FRCSE, DPH

AFTER a long illness Dr. Ash, medical officer of health for Derbyshire, died on Nov. 9, aged 55. Born in Somersetshire, he was educated at Blundell's School, Tiverton, and began his medical career by entering the London Hospital, where he was captain of the rugby fifteen. After graduating in 1912, he held several house-appointments at the London and saw service from 1914 to 1919 as a temporary surgeon in the Royal Navy; at the Royal Naval Hospital, South Queensferry, he had under his care casualties from the battle of Jutland and later he served on board two ships of a cruiser squadron, and with the naval demobilisation board at Dundee. He then turned towards public health, obtaining the DPH in 1920 at Manchester; but his interest in surgery led him to take the fellowship of the Royal College of Surgeons of Edinburgh in 1923. His first appointment was that of assistant county MOH of Lancashire; in 1923 he became deputy MOH for Middlesex; and eventually, in 1925, at the early age of 36, he was appointed to Derbyshire. There his interest in clinical medicine prompted him to a study of "Derbyshire neck," which bore fruit in an important communication on goitre next year in the *Journal of State Medicine*. His administrative abilities had full scope in the county, and his extension of the midwifery services was an outstanding achievement. All those with whom he came in contact recognised him as an enthusiast whose wisdom carried his efforts along the right lines. He had the confidence of his subordinates and of his colleagues both lay and medical. In those affairs in which family practice and public health were associated, he was always a help to the profession in the area. At the beginning of the present war his abilities as an organiser were illustrated by his success in planning the Civil Defence casualty services, in a county with a scattered population and of varying geographical features. The service was accepted as a model and he was invited to describe it by broadcast. In 1943, in recognition of this work, he was created OBE. By his death the public have lost a valued servant and the profession a good friend.

Dr. Ash was at one time president of the Association of County Medical Officers of Health and also of the East Midlands branch of the Society of Medical Officers of Health, and he was a prominent Freemason. His wife, formerly Miss Pryce-Jones, survives him.

GREVILLE MATHESON MACDONALD

M D LOND.

SIXTY years ago children grew up with *The Princess and the Goblin*, *Phantastes* and *At the Back of the North Wind*. George Macdonald's stories, remote yet real, impossible but disturbingly likely, were apt to come to life in their dreams. His eldest son, who has died on Nov. 3 at the age of 88, told in his *Reminiscences of a Specialist* of a childhood packed with fairy-tales, including those of Lewis Carroll, who was a family friend. But the little boy seems to have been given a dreadful faith in his own dullness. From this he was delivered by no less a person than Octavia Hill, and in his teens he decided to become a doctor, despite early signs of chronic deafness which threatened to prove a handicap. At King's College, London, his student years passed successfully; he founded the *King's College Magazine*, was one of Lister's first dressers in London, and qualified in 1879. He came near to abandoning medicine, as hopeless for a deaf man; but he persevered, and took his MB with honours in 1880. After a tour round the world and two years' practice in Florence, he came back to demonstrate anatomy at King's. An appointment as house-surgeon at the Throat Hospital, Golden Square, was the beginning of specialism, and in due course he joined the staff of his old hospital. In 1904, however, he retired to Haslemere. He wrote some memoirs, several books on his specialty, more on religious and philosophic themes, several fairy-tales, and one or two romances.

Dr. W. H. PARRY and Dr. E. WYN JONES have been nominated as sheriffs for Caenarvonshire and Sir EDMUND SPRIGGS for Denbighshire.

Public Health

Schools of the Future

IT is no uncommon sight, in England, to see a village school in varnished Gothic, small and dark, standing in the corner of a meadow. The pleasant fancy that the children, if cramped in the classroom, at least have the run of a fine field is quickly ended by the discovery that a miserable backyard behind the school has been fenced off and paved with asphalt. That is the playground; the meadow is for sheep, or cows or horses. True, once the school door shuts, rustic children have the run of the countryside; whereas the town child, with the same allotment of playing space, has no such compensation. But in town and country alike the habit of mind that allowed a playground to recall a prison yard is as out of date as the old school buildings.

The draft building regulations just published by the Ministry of Education (HM Stationery Office, 6*d*.) promise something better. The buildings proposed are far beyond the standard found in most schools today: classrooms are to be larger and airier, with good provision for practical work; assembly halls are to be wired for broadcasting, equipped for film projection, and fitted with a good stage for acting. Proper dining-rooms and kitchens will make school feeding easier. One or two points, however, are less satisfactory. Thus the proposed area, to include playground, for a one-class school is only ¼ acre, and for a five-class school 2 acres. Playing fields will of course be additional to this space, and these are more generously conceived, running from ¼ to 14 acres.

A question that may trouble school medical officers is the space allotted to beds in dormitories. Only 3 feet is to be allowed between beds, which means that the heads of the occupants may be only about 5 feet apart, unless the beds are arranged head-to-foot. In small boarding schools two sickrooms, each capable of being isolated, are to be provided and in larger schools a separate sanatorium.

The standards set out in the draft will become statutory unless Parliament decides to annul them within six weeks. As they will establish the pattern of our schools, probably for the coming century, they need serious study.

Infectious Disease in England and Wales

WEEK ENDED NOV. 11

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The number of civilian and service sick in the Infectious Hospitals of the London County Council on Nov. 8 was 744. During the previous week the following cases were admitted: scarlet fever, 41; diphtheria, 17; measles, 15; whooping-cough, 18.

Deaths.—In 126 great towns there were 2 (0) deaths from enteric fevers, 6 (0) from measles, 1 (0) from scarlet fever, 2 (0) from whooping-cough, 12 (0) from diphtheria, 41 (3) from diarrhœa and enteritis under two years, and 25 (2) from influenza. The figures in parentheses are those for London itself.

Sunderland and Newport, Mon, each reported a fatal case of enteric fever. There were 7 deaths from diarrhœa at Birmingham.

The number of stillbirths notified during the week was 209 (corresponding to a rate of 31 per thousand total births), including 15 in London.

CARDS FROM LABRADOR AGAIN.—The Grenfell Association, about this time of year, have happy ideas for Christmas cards, which they sell in aid of the needy and hardworking people of Labrador and Newfoundland. This year's batch are well up to standard—polar bears, huskies and penguins do honour to the festival and remind us of regions where the deep-sea fishermen and their families know the full meaning of a white Christmas. Those who wish to buy cards or calendars should write to the hon. secretary, Grenfell Association, 66, Victoria Street, London, SW1.

On Active Service

CASUALTIES

KILLED

Lieutenant DAVID M. DE R. WINSER, MC, BM OXFD, RAMC

DIED OF WOUNDS

Captain JOHN HUNTLY TARRING LAWTON, MRCS, RAMC
Captain PHILIP AUGUSTUS ROBINSON, MRCS, RAMC

DIED

Captain IAN WILLIAM BARCLAY, MB GLASG., RAMC

WOUNDED

Lieutenant A. E. WEBSTER, RCAMC

AWARDS

DSC

Surgeon Commander C. P. COLLINS, MB LOND., RN

MC

Captain SUBRAMANIAIN GOPALKRISHNAN, IAMC
Captain C. J. PINTO, MB, IAMC
Captain C. S. RAO, IAMC
Captain L. J. CALVERT, RCAMC
Captain D. G. CAMERON, RCAMC
Captain C. B. CASWELL, RCAMC
Captain R. C. MELLOW, RCAMC
Flight Lieutenant R. N. RYCROFT, MRCS, RAFVR

Rycroft was the only medical officer on one of the beaches of Normandy on D day. Owing to the intense bombardment, it was not possible for him or any member of his unit to move off the beach for 6 hours. He worked for 48 hours tending casualties among the personnel of his unit and also aided some 75 American wounded. He was himself slightly wounded but his efforts on behalf of others were untiring.

Major R. W. JONES, MB EDIN., RAMC

Major Jones commanded a company of a field ambulance which landed with an infantry brigade on the first day of the invasion. During the attack by the brigade on its objectives in the area east of Bayeux on June 6, he constantly attended wounded whilst under heavy fire. In addition to leading his own assault section he visited the other sections of his company, moving under constant fire of snipers, and controlled their work in addition. As a result of his exertions all casualties of the brigade were successfully evacuated.

Captain J. A. PETRIE, MB ST. AND., RAMC

Captain Petrie was RMO with a battalion which made three attacks on the Gustav line during one week last May. Throughout this time he always had his RAP well up with the battalion despite almost continuous heavy enemy shell fire. During one period of 24-hours he treated some 300 casualties. The ready treatment of wounded at his hands (of his own men and those of other units) was invaluable in maintaining the morale of the battalion in battle.

MENTION IN DESPATCHES

Surgeon Commander R. D. BRADSHAW, MB EDIN., RNVR
Surgeon Lieut.-Commander D. W. BURNFORD, MRCS, RNVR
Surgeon Lieut.-Commander G. D. CHANNELL, MB LOND., RNVR
Surgeon Lieutenant R. G. G. EVANS, MRCS, RNVR
Surgeon Lieutenant G. C. HAYWOOD, MB, RNVR
Surgeon Lieutenant D. A. MACIVER, MB EDIN., RNVR

MEMOIR

Captain J. T. DOYLE was killed in action in September, four days after landing in the Arnhem area with an airborne division. He was born in 1920, the son of Mr. Norman Doyle of Cheam, and educated at Caterham School and Guy's Hospital. His family had a long-standing connexion with Guy's, for in 1822 his greatgrandmother had been married from the hospital where her father was then apothecary. Doyle qualified MRCS in 1942 and graduated MB Lond. the following year. He was appointed to Guy's (USA) Hospital at Seal, where he quickly showed his capacity to handle the varied problems which face a house-officer, and where by his charm of manner and ability he won the affection and respect of his medical and nursing colleagues, and of his patients. While still a student he served with the AFS at Purley, and later with the fire squad at Guy's which saved the hospital when it was encircled by fire and most of the surrounding buildings were razed to the ground. Doyle was commissioned in the RAMC in 1943 and later transferred to a landing-field hospital.

B. Berrys Studios

Notes and News

MEDICAL SCIENCE AND PHYSICAL EDUCATION

ON NOV. 15 Brigadier F. D. HOWITT, FRCP, presided at the second annual meeting of the Research Board for the Correlation of Medical Science and Physical Education. Members of the board, he said, had worked in four main groups: Mr. Victor Lack, FRCOG, had taken charge of maternity and child welfare; Mr. Walton of education and recreation; Surgeon Captain Digby Bell of the Services; and Brigadier F. A. E. Crew, MD, FRS, of industry. A scientific advisory committee had been formed with Sir Farquhar Buzzard, FRCP, as chairman and Prof. Lancelot Hogben, FRS, as assessor.

Mr. H. U. WILLINK, Minister of Health, said that we ought to know more of "how to measure fitness for daily occupations, whether sedentary or manual, and how fitness for such ordinary work can best be secured and maintained." Not only productive efficiency must be considered but also the happiness of the worker in his job. In the Services, under the special circumstances of war, there had been a big change in the physique of young men and women as a result of carefully graded training: "the laboratory experiment has been successful, but the step from the laboratory to commercial production is often a long one. We have still to discover how these results can be successfully applied in ordinary civilian life."

Sir ALFRED WEBB-JOHNSON, FRCS, congratulated the Ling Association on launching this movement, and was glad it had the personal interest of the Ministers of Health and Labour. Never before had it been so important for the doctor and statesman to be closely allied. But medical advice to Ministers must be sound, and based on scientific inquiry. Little, for example, was known about the effect of physical exercise on fitness for childbearing. Two urgent needs were that, in planning towns and schools, adequate provision should be made for recreation, with playing-fields and swimming-baths, and that good use should be made of the many men and women specially trained in physical education and rehabilitation who would be released from the Services.

Brigadier CREW said that Professor Hogben and Lieut.-Colonel W. S. Tegner, MRCP, had drawn up a programme of research. The board could be the means of bringing together people who, living and working among them, could recognise and define the problems of social medicine, and those in university departments of social medicine who had the technique and facilities for investigation.

EXHIBITION OF HEALTH CENTRES

LAST week Mr. Somerville Hastings, FRCS, chairman of the London County Council, opened an exhibition of posters at the Housing Centre, 13, Suffolk Street, Haymarket, London, SW1. These posters, which have been made by Mr. Erno Goldfinger and Miss Ursula Blackwell, are designed to show the advantages that might accrue from the building of health centres and a possible form the health centre might take.

The first posters emphasise by photographs the effects of bad environment on health and the improvement in health that is gained in good surroundings. Then come some charts showing the proportion of the population in different age-groups now cared for through National Health Insurance, and the distribution of doctors in England and Wales. This is followed by a contrast, pictorially illustrated, between the complicated and overlapping services of today and the comprehensive service which might be obtained by proper coördination of the work of hospital and health centres. Some photographs are shown of existing health centres before passing on to detailed drawings and plans of the type of health centre Mr. Goldfinger thinks would be appropriate to provide the services promised in the white-paper.

The exhibition, though primarily intended for a lay audience, should yet prove of interest to doctors. They will find in Mr. Goldfinger's plans a wealth of ideas deserving detailed study. It is unlikely that every health centre would include all that is here shown provided. Local provision will obviously vary with local need. But what this exhibition does show is how easily the health centre could grow into something much more, both in structure and in spirit, than the conception of a "communal surgery."

The exhibition remains open until Nov. 30.

Lord NUFFIELD has been elected president of Guy's Hospital in succession to Lord Goschen, who has resigned.

EVERYBODY'S BUSINESS

CURIOSITY about health and interest in preserving it is almost universal. Two examples of health-education campaigns have lately come to our notice which show how lively it can be. In a "health forum" held at Cardiff last year each question from the audience was answered by one of a group of experts who included the regional blood-transfusion officer, the medical superintendents of a city isolation and a municipal general hospital, the chief sanitary inspector, the deputy city engineer, a general practitioner, the principal medical officer of the Welsh National Memorial Association for the Prevention and Treatment of Tuberculosis, two representatives of the education authority, the medical officer of health and a factory inspector. A report, obtainable from the MOH, shows that the answers were as creditable as the questions.

A second adventure in health education is a weekly course of lectures, on The Health Centre in Action, now in progress at Glasgow. The topics include the man in the street and public health, pneumonia, clinical pathology, prevention of blindness, artificial limbs, stomach ulcer, rehabilitation, diabetes, teeth, midwifery and tuberculosis. Straightforward lectures are interspersed with less formal entertainments, including a comedy talkie, *How to Spread Disease Quickly*, a brains-trust, a practical demonstration of food-testing and a social evening. The programme, arranged by Dr. T. Simpson Crawford, will repay study by those who might do something of the same kind.

TYPHOID ABSCESS

REFERRING to the notes in our issues of Sept. 9 and 23 Dr. I. Friedmann recalls the case of a young butcher admitted to hospital with vague periumbilical pains of 3–4 weeks' duration and a loss of 18 lb. in weight. A mass the size of a child's head was felt in the right mesogastrium, and on laparotomy this proved to be an enlarged mesenteric gland. Needling produced thick pus from which *Bact. typhosum* was grown in pure culture. He points out that "Purulent mesenteric glands due to typhoid—but often apparently unrelated to the disease—may be the cause of peritonitis (localised or diffuse), abdominal hæmorrhage, intestinal obstruction, or abdominal tumours of unknown origin." In the case he mentions, published with J. Cervenansky (in *Čas. čes. Lék.* 1936, **75**, 247), no history of typhoid or symptoms suggesting it could be elicited.

Society of Apothecaries of London

The court of assistants recently met under the chairmanship of Dr. J. P. Hedley, master of the society. An illuminated address was presented to Sir Stanley Woodwark on the completion of three years as master. Brigadier R. Ogier Ward took his seat as a member of the court; and a past master's medal was bestowed upon Mr. T. B. Layton. Dr. Hedley was re-elected as the society's representative on the General Medical Council, and Dr. W. D. Kirkwood on the Central Council for District Nursing in London. J. C. N. Wakeley was bound apprentice to C. P. G. Wakeley for four years. The following were admitted to the freedom of the society: by redemption, J. Bernstien, T. R. Hill, A. W. Kendall; and by servitude, A. W. Banks.

The following diplomas were granted upon examination:—

LMSSA.—M. J. Blunt, D. A. Cox, D. I. T. Edwards, E. D. C. Jones, R. A. Leeming, I. A. Nazroo, D. T. H. Paine, E. F. Roberts.

Master of Midwifery.—J. N. I. Emblin, A. Rothbaum, J. W. H. Simpson.

Surgeon Rear-Admiral C. P. G. Wakeley delivered a lecture in the hall on War Surgery in 1944, in place of Colonel Elliott Cutler, whose military duties prevented him from lecturing.

Nutrition Society

The conference on the nutritional rôle of the microflora in the alimentary tract, which the English group of the society was to have held last July, will now take place on Saturday, Dec. 30, beginning at 11 AM, at the London School of Hygiene, Keppel Street, WC1.

Electron Micrography

The scientific and technical group of the Royal Photographic Society and of the Association for Scientific Photography will meet at 3 PM today, Saturday, Nov. 25, at 16, Prince's Gate, London, SW7, to discuss this subject. The speakers are Mr. G. Parr, AMIEE, Mr. E. M. Crook, PH D, Miss F. M. L. Sheffield, D SC, Mr. L. V. Chilton, FRSP and Mr. D. G. Drummond, PH D.

Royal College of Physicians of Edinburgh

At a meeting held on Nov. 7, with Dr. A. Fergus Hewat, the president, in the chair, Dr. W. F. T. Haultain (Edinburgh) was elected to the fellowship.

Army Blood Transfusion Service

Brigadier L. E. H. Whitby will give a lecture on this subject at the Royal Society of Arts, John Adam Street, London, WC2, on Wednesday, Nov. 29, at 1.45 PM. Surgeon Rear-Admiral G. Gordon-Taylor will be in the chair.

Course on Mental Deficiency

The University of London extension and tutorial classes council, in coöperation with the Provisional National Council for Mental Health, will hold a course on mental deficiency and allied condition, provided sufficient applications are received, at the London School of Hygiene, Keppel Street, WC1, from March 12 to 23. Further information from Miss Evelyn Fox, c/o the University Extension Department, 39, Queen Anne Street, W1.

Royal Society of Medicine

At the section of odontology, on Monday, Nov. 27, at 4.30 PM, Dr. G. J. Parfitt will speak on bone pathology. At the section of medicine, on Nov. 28, at 4.30 PM, Prof. H. P. Himsworth will open a discussion on nutritional factors in liver disease. At the section of otology, on Dec. 1, at 10.30 AM, Mr. E. D. D. Davis, Mr. F. W. Watkyn-Thomas and Mr. T. E. Cawthorne will open a discussion on endocranial complications of otitic origin. At 2.30 PM, on the same day, the section of anæsthetics is holding a discussion on anæsthesia in the dental chair, when the speakers will be Dr. K. B. Pinson, Dr. F. W. Roberts and Dr. A. D. Marston. At the same hour, at the section of laryngology, Mr. Bedford Russell will speak on chronic frontal sinusitis, and Colonel Norton Canfield, USAMC, and Major Cane, USAMC, on the use of tantalum in plastic operations on the frontal bone.

British Orthopædic Association

A meeting of the association will be held in London on Dec. 15 and 16. On Friday, the 15th, at the Royal College of Surgeons, Lincoln's Inn Fields, WC2, at 9.15 AM, Mr. E. A. Nicoll will show the British Council film *Accident Service*. Afterwards Prof. W. E. Le Gros Clark will speak on the efficiency of intramuscular anastomosis and regeneration of devascularised muscles, and Dr. Ruth Bowden on changes in voluntary muscle after denervation and during re-innervation. Short papers will be read during the afternoon session, which begins at 2 PM. On Saturday, the 16th, the meeting will be continued at 10 AM at Queen Mary's Hospital, Roehampton, where Dr. A. J. Craft will demonstrate the standard limbs supplied by the Ministry of Pensions. Mr. F. G. St. Clair Strange will also speak on amputations and Colonel Rex Diveley, USAMC, will show a film entitled *Meet Mr. McConachie*.

The vitamin D in Cow and Gate Milk Food is being increased to 320 units per oz. Each ounce of the reconstituted milk will therefore contain 40 units of vitamin D.

THE *Deutsche medizinische Wochenschrift* is now suspended, and its place is being taken by a *Medizinische Zeitschrift*, which will also include *Medizinische Klinik*, *Medizinische Welt*, *Münchener medizinische Wochenschrift* and *Wiener medizinische Wochenschrift*.

Births, Marriages and Deaths

BIRTHS

EVANS.—On Nov. 17, at Hitchin, the wife of Squadron-Leader Byron Evans, MD, RAFVR—a son.

PORTER.—On Nov. 13, at Burnham-on-Crouch, the wife of Surgeon Lieut. D. S. Porter, RNVR—a daughter.

MARRIAGES

HOUSE—SHAW.—On Nov. 11, at Seal, Roger Allan House, MRCS, flight-lieutenant, RAFVR, to Jessie Mary Shaw, section-officer, WAAF.

DEATHS

KELLY.—On Nov. 16, at Liverpool, Sir Robert Kelly, CB, MD LPOOL, FRCS.

SEARS.—On Nov. 12, at Colyton, Devon, Charles Newton Sears, MD LOND., of Mullion, Cornwall, and late of London, SE12, aged 64.

SUCKLING.—On Nov. 16, Ernest Victor Suckling, MB, DPH, FRIC, FR SAN I., aged 51.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export.

"... a bottle of Howards' Anæsthetic Ether which was tested in the laboratory of a Government department in 1927 and was kept there in a cupboard until September, 1943, when it was again examined, was found to answer all the requirements of the British Pharmacopœia, and showed no sign of deterioration whatever after 16 years' storage."

HOWARDS' Standard Ether is packed in ¼ lb. and 1 lb. bottles and in bulk, and may be obtained from any Chemist or Wholesale House

Manufactured by

HOWARDS & SONS LTD. (EST. 1797) ILFORD, ESSEX

MALNUTRITION

Make good the dietary deficiency with BEMAX ★

Sub-optimal nutrition is known to be responsible for a variety of minor disorders which occur in the twilight zone of nutritive failure—for example, easy fatiguability, both mental and physical, functional digestive disorders with anorexia and gastro-intestinal atony, anæmia, emotional instability, neuritis and lowered metabolic rate. It is now generally agreed that malnutrition is nearly always of a mixed pattern, and is seldom attributable to the lack of a single factor. Bemax provides a variety of the nutrients most commonly lacking.

The Vitamins and Minerals in

★BEMAX

Vitamins Limited, 23, Upper Mall, London, W.6.

1 oz. of Bemax provides :—

Vitamin A	280 i.u.
Vitamin B_1	250 i.u. (0.75 mg.)
Vitamin B_2 (Riboflavin)	0.3 mg.
Nicotinic Acid	1.7 mg.
Vitamin B_6	0.45 mg.
Vitamin E	8 mg.
Manganese	4.0 mg.
Iron	2.7 mg.
Copper	0.45 mg.
Protein	30%
Available Carbohydrate	39%
Fibre	2%
Calorific Value	104

PHYLLOSAN

Members of the Medical Profession
supplied with bulk quantities
for prescription purposes

For prices, apply direct to

NATURAL CHEMICALS LTD., ST. HELENS, LANCASHIRE

BIOLOGICAL MBL PREPARATIONS

ANTIPEOL CUTANEOUS VACCINE OINTMENT

contains sterile vaccine filtrates (antivirus) of all the common strains of **STAPHYLOCOCCI, STREPTOCOCCI** and **B. PYOCYANEUS,** in a lanoline-zinc-ichthyol base.

INDICATIONS : Abscesses, boils, burns, eczema, ulcers, hæmorrhoids, impetigo, sycosis, wounds, and all inflammatory cutaneous infections. **ANTIPEOL LIQUID** for infections of the ear, septic cavities and suppurating wounds.

OPHTHALMO-ANTIPEOL

contains, in a semi-fluid base, the sterile vaccine filtrates of **STAPHYLOCOCCI, STREPTOCOCCI, B. PYOCYANEUS, PNEUMOCOCCI FRAENKEL** and **GONOCOCCI.**

INDICATIONS : Conjunctivitis, blepharitis, keratitis, dacriocystitis, and all inflammatory conditions and lesions of the eye.

RHINO-ANTIPEOL

a nasal immunising cream, contains Antipeol Liquid and the antivirus of **PNEUMOCOCCI, PNEUMO-BACILLI, ENTEROCOCCI, M. CATARRHALIS, B. PFEIFFER,** and calmative and decongestive ingredients.

INDICATIONS : Coryza, rhinitis, hay fever, catarrh, influenza, common cold and other naso-pharyngeal infections.

ENTEROFAGOS

Polyvalent bacteriophages specific against 144 strains of micro-organisms common to infections of the gastro-intestinal tract, kidneys and bladder. **RAPIDLY EFFECTIVE RESULTS** in enteritis, dysentery, colitis, diarrhœas, B. coli infections, typhoid and paratyphoid fevers and other intestinal and para-intestinal infection.

DETENSYL

vagato-polyhormonic hypotensor, for gentle and regular reduction of arterial tension.

INDICATIONS : High blood pressure, arterio-sclerosis, arthritis, palpitation, ocular and auditory troubles of hypertension. No contra-indications.

CLINICAL SAMPLES AND LITERATURE FROM

MEDICO-BIOLOGICAL LABORATORIES LTD., South Norwood, LONDON, S.E.25

THE SAFE LAXATIVE

Constipation is probably the most frequent cause of ill health, and it is the concern of those who tend the sick to relieve their patients from this disorder.

In this connection, ' California Syrup of Figs ' perfectly meets the need for a safe yet efficacious aperient. Completely void of mineral or synthetic cathartics, it is corrective not purgative, and re-educates the bowel to normal function.

Its pleasant taste and simplicity of dosage makes ' California Syrup of Figs ' the laxative of choice for young and old alike. It may safely be employed either in occasional constipation or for routine use in everyday family life.

'CALIFORNIA SYRUP OF FIGS'

THE CHAS. H. PHILLIPS CHEMICAL CO., LTD.

179, ACTON VALE, LONDON, W.3

Obituary

WALTER MARTIN ASH

OBE, MB LOND., FRCSE, DPH

AFTER a long illness Dr. Ash, medical officer of health for Derbyshire, died on Nov. 9, aged 55. Born in Somersetshire, he was educated at Blundell's School, Tiverton, and began his medical career by entering the London Hospital, where he was captain of the rugby fifteen. After graduating in 1912, he held several house-appointments at the London and saw service from 1914 to 1919 as a temporary surgeon in the Royal Navy; at the Royal Naval Hospital, South Queensferry, he had under his care casualties from the battle of Jutland and later he served on board two ships of a cruiser squadron, and with the naval demobilisation board at Dundee. He then turned towards public health, obtaining the DPH in 1920 at Manchester; but his interest in surgery led him to take the fellowship of the Royal College of Surgeons of Edinburgh in 1923. His first appointment was that of assistant county MOH of Lancashire; in 1923 he became deputy MOH for Middlesex; and eventually, in 1925, at the early age of 36, he was appointed to Derbyshire. There his interest in clinical medicine prompted him to a study of "Derbyshire neck," which bore fruit in an important communication on goitre next year in the *Journal of State Medicine*. His administrative abilities had full scope in the county, and his extension of the midwifery services was an outstanding achievement. All those with whom he came in contact recognised him as an enthusiast whose wisdom carried his efforts along the right lines. He had the confidence of his subordinates and of his colleagues both lay and medical. In those affairs in which family practice and public health were associated, he was always a help to the profession in the area. At the beginning of the present war his abilities as an organiser were illustrated by his success in planning the Civil Defence casualty services, in a county with a scattered population and of varying geographical features. The service was accepted as a model and he was invited to describe it by broadcast. In 1943, in recognition of this work, he was created OBE. By his death the public have lost a valued servant and the profession a good friend.

Dr. Ash was at one time president of the Association of County Medical Officers of Health and also of the East Midlands branch of the Society of Medical Officers of Health, and he was a prominent Freemason. His wife, formerly Miss Pryce-Jones, survives him.

GREVILLE MATHESON MACDONALD

M D LOND.

SIXTY years ago children grew up with *The Princess and the Goblin*, *Phantastes* and *At the Back of the North Wind*. George Macdonald's stories, remote yet real, impossible but disturbingly likely, were apt to come to life in their dreams. His eldest son, who has died on Nov. 3 at the age of 88, told in his *Reminiscences of a Specialist* of a childhood packed with fairy-tales, including those of Lewis Carroll, who was a family friend. But the little boy seems to have been given a dreadful faith in his own dullness. From this he was delivered by no less a person than Octavia Hill, and in his teens he decided to become a doctor, despite early signs of chronic deafness which threatened to prove a handicap. At King's College, London, his student years passed successfully; he founded the *King's College Magazine*, was one of Lister's first dressers in London, and qualified in 1879. He came near to abandoning medicine, as hopeless for a deaf man; but he persevered, and took his MB with honours in 1880. After a tour round the world and two years' practice in Florence, he came back to demonstrate anatomy at King's. An appointment as house-surgeon at the Throat Hospital, Golden Square, was the beginning of specialism, and in due course he joined the staff of his old hospital. In 1904, however, he retired to Haslemere. He wrote some memoirs, several books on his specialty, more on religious and philosophic themes, several fairy-tales, and one or two romances.

Dr. W. H. PARRY and Dr. E. WYN JONES have been nominated as sheriffs for Caernarvonshire and Sir EDMUND SPRIGGS for Denbighshire.

Public Health

Schools of the Future

IT is no uncommon sight, in England, to see a village school in varnished Gothic, small and dark, standing in the corner of a meadow. The pleasant fancy that the children, if cramped in the classroom, at least have the run of a fine field is quickly ended by the discovery that a miserable backyard behind the school has been fenced off and paved with asphalt. That is the playground; the meadow is for sheep, or cows or horses. True, once the school door shuts, rustic children have the run of the countryside; whereas the town child, with the same allotment of playing space, has no such compensation. But in town and country alike the habit of mind that allowed a playground to recall a prison yard is as out of date as the old school buildings.

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The number of civilian and service sick in the Infectious Hospitals of the London County Council on Nov. 8 was 744. During the previous week the following cases were admitted: scarlet fever, 41; diphtheria, 17; measles, 15; whooping-cough, 18.

Deaths.—In 126 great towns there were 2 (0) deaths from enteric fevers, 6 (0) from measles, 1 (0) from scarlet fever, 2 (0) from whooping-cough, 12 (0) from diphtheria, 41 (3) from diarrhœa and enteritis under two years, and 25 (2) from influenza. The figures in parentheses are those for London itself.

Sunderland and Newport, Mon, each reported a fatal case of enteric fever. There were 7 deaths from diarrhœa at Birmingham.

The number of stillbirths notified during the week was 209 (corresponding to a rate of 31 per thousand total births), including 15 in London.

CARDS FROM LABRADOR AGAIN.—The Grenfell Association, about this time of year, have happy ideas for Christmas cards, which they sell in aid of the needy and hardworking people of Labrador and Newfoundland. This year's batch are well up to standard—polar bears, huskies and penguins do honour to the festival and remind us of regions where the deep-sea fishermen and their families know the full meaning of a white Christmas. Those who wish to buy cards or calendars should write to the hon. secretary, Grenfell Association, 66, Victoria Street, London, SW1.

On Active Service

CASUALTIES

KILLED

Lieutenant DAVID M. DE R. WINSER, MC, BM OXFD, RAMC

DIED OF WOUNDS

Captain JOHN HUNTLY TARRING LAWTON, MRCS, RAMC
Captain PHILIP AUGUSTUS ROBINSON, MRCS, RAMC

DIED

Captain IAN WILLIAM BARCLAY, MB GLASG., RAMC

WOUNDED

Lieutenant A. E. WEBSTER, RCAMC

AWARDS

DSC

Surgeon Commander C. P. COLLINS, MB LOND., RN

MC

Captain SUBRAMANIAIN GOPALKRISHNAN, IAMC
Captain C. J. PINTO, MB, IAMC
Captain C. S. RAO, IAMC
Captain L. J. CALVERT, RCAMC
Captain D. G. CAMERON, RCAMC
Captain C. B. CASWELL, RCAMC
Captain R. C. MELLOW, RCAMC
Flight Lieutenant R. N. RYCROFT, MRCS, RAFVR

Rycroft was the only medical officer on one of the beaches of Normandy on D day. Owing to the intense bombardment, it was not possible for him or any member of his unit to move off the beach for 6 hours. He worked for 48 hours tending casualties among the personnel of his unit and also aided some 75 American wounded. He was himself slightly wounded but his efforts on behalf of others were untiring.

Major R. W. JONES, MB EDIN., RAMC

Major Jones commanded a company of a field ambulance which landed with an infantry brigade on the first day of the invasion. During the attack by the brigade on its objectives in the area east of Bayeux on June 6, he constantly attended wounded whilst under heavy fire. In addition to leading his own assault section he visited the other sections of his company, moving under constant fire of snipers, and controlled their work in addition. As a result of his exertions all casualties of the brigade were successfully evacuated.

Captain J. A. PETRIE, MB ST. AND., RAMC

Captain Petrie was RMO with a battalion which made three attacks on the Gustav line during one week last May. Throughout this time he always had his RAP well up with the battalion despite almost continuous heavy enemy shell fire. During one period of 24-hours he treated some 300 casualties. The ready treatment of wounded at his hands (of his own men and those of other units) was invaluable in maintaining the morale of the battalion in battle.

MENTION IN DESPATCHES

Surgeon Commander R. D. BRADSHAW, MB EDIN., RNVR
Surgeon Lieut.-Commander D. W BURNFORD, MRCS, RNVR
Surgeon Lieut.-Commander G. D. CHANNELL, MB LOND., RNVR
Surgeon Lieutenant R. G. G. EVANS, MRCS, RNVR
Surgeon Lieutenant G. C. HAYWOOD, MB, RNVR
Surgeon Lieutenant D. A. MACIVER, MB EDIN., RNVR

MEMOIR

Captain J. T. DOYLE was killed in action in September, four days after landing in the Arnhem area with an airborne division. He was born in 1920, the son of Mr. Norman Doyle of Cheam, and educated at Caterham School and Guy's Hospital. His family had a long-standing connexion with Guy's, for in 1822 his greatgrandmother had been married from the hospital where her father was then apothecary. Doyle qualified MRCS in 1942 and graduated MB Lond. the following year. He was appointed to Guy's (USA) Hospital at Seal, where he quickly showed his capacity to handle the varied problems which face a house-officer, and where by his charm of manner and ability he won the affection and respect of his medical and nursing colleagues, and of his patients. While still a student he served with the AFS at Purley, and later with the fire squad at Guy's which saved the hospital when it was encircled by fire and most of the surrounding buildings were razed to the ground. Doyle was commissioned in the RAMC in 1943 and later transferred to a landing-field hospital.

B. Barrys Studios

Notes and News

MEDICAL SCIENCE AND PHYSICAL EDUCATION

ON Nov. 15 Brigadier F. D. HOWITT, FRCP, presided at the second annual meeting of the Research Board for the Correlation of Medical Science and Physical Education. Members of the board, he said, had worked in four main groups: Mr. Victor Lack, FRCOG, had taken charge of maternity and child welfare; Mr. Walton of education and recreation; Surgeon Captain Digby Bell of the Services; and Brigadier F. A. E. Crew, MD, FRS, of industry. A scientific advisory committee had been formed with Sir Farquhar Buzzard, FRCP, as chairman and Prof. Lancelot Hogben, FRS, as assessor.

Mr. H. U. WILLINK, Minister of Health, said that we ought to know more of "how to measure fitness for daily occupations, whether sedentary or manual, and how fitness for such ordinary work can best be secured and maintained." Not only productive efficiency must be considered but also the happiness of the worker in his job. In the Services, under the special circumstances of war, there had been a big change in the physique of young men and women as a result of carefully graded training: "the laboratory experiment has been successful, but the step from the laboratory to commercial production is often a long one. We have still to discover how these results can be successfully applied in ordinary civilian life."

Sir ALFRED WEBB-JOHNSON, FRCS, congratulated the Ling Association on launching this movement, and was glad it had the personal interest of the Ministers of Health and Labour. Never before had it been so important for the doctor and statesman to be closely allied. But medical advice to Ministers must be sound, and based on scientific inquiry. Little, for example, was known about the effect of physical exercise on fitness for childbearing. Two urgent needs were that, in planning towns and schools, adequate provision should be made for recreation, with playing-fields and swimming-baths, and that good use should be made of the many men and women specially trained in physical education and rehabilitation who would be released from the Services.

Brigadier CREW said that Professor Hogben and Lieut.-Colonel W. S. Tegner, MRCP, had drawn up a programme of research. The board could be the means of bringing together people who, living and working among them, could recognise and define the problems of social medicine, and those in university departments of social medicine who had the technique and facilities for investigation.

EXHIBITION OF HEALTH CENTRES

LAST week MR. Somerville Hastings, FRCS, chairman of the London County Council, opened an exhibition of posters at the Housing Centre, 13, Suffolk Street, Haymarket, London, SW1. These posters, which have been made by Mr. Erno Goldfinger and Miss Ursula Blackwell, are designed to show the advantages that might accrue from the building of health centres and a possible form the health centre might take.

The first posters emphasise by photographs the effects of bad environment on health and the improvement in health that is gained in good surroundings. Then come some charts showing the proportion of the population in different age-groups now cared for through National Health Insurance, and the distribution of doctors in England and Wales. This is followed by a contrast, pictorially illustrated, between the complicated and overlapping services of today and the comprehensive service which might be obtained by proper coördination of the work of hospital and health centres. Some photographs are shown of existing health centres before passing on to detailed drawings and plans of the type of health centre Mr. Goldfinger thinks would be appropriate to provide the services promised in the white-paper.

The exhibition, though primarily intended for a lay audience, should yet prove of interest to doctors. They will find in Mr. Goldfinger's plans a wealth of ideas deserving detailed study. It is unlikely that every health centre would include all that is here shown provided. Local provision will obviously vary with local need. But what this exhibition does show is how easily the health centre could grow into something much more, both in structure and in spirit, than the conception of a "communal surgery."

The exhibition remains open until Nov. 30.

Lord NUFFIELD has been elected president of Guy's Hospital in succession to Lord Goschen, who has resigned.

EVERYBODY'S BUSINESS

CURIOSITY about health and interest in preserving it is almost universal. Two examples of health-education campaigns have lately come to our notice which show how lively it can be. In a "health forum" held at Cardiff last year each question from the audience was answered by one of a group of experts who included the regional blood-transfusion officer, the medical superintendents of a city isolation and a municipal general hospital, the chief sanitary inspector, the deputy city engineer, a general practitioner, the principal medical officer of the Welsh National Memorial Association for the Prevention and Treatment of Tuberculosis, two representatives of the education authority, the medical officer of health and a factory inspector. A report, obtainable from the MOH, shows that the answers were as creditable as the questions.

A second adventure in health education is a weekly course of lectures, on The Health Centre in Action, now in progress at Glasgow. The topics include the man in the street and public health, pneumonia, clinical pathology, prevention of blindness, artificial limbs, stomach ulcer, rehabilitation, diabetes, teeth, midwifery and tuberculosis. Straightforward lectures are interspersed with less formal entertainments, including a comedy talkie, *How to Spread Disease Quickly*, a brains-trust, a practical demonstration of food-testing and a social evening. The programme, arranged by Dr. T. Simpson Crawford, will repay study by those who might do something of the same kind.

TYPHOID ABSCESS

REFERRING to the notes in our issues of Sept. 9 and 23 Dr. I. Friedmann recalls the case of a young butcher admitted to hospital with vague periumbilical pains of 3–4 weeks' duration and a loss of 18 lb. in weight. A mass the size of a child's head was felt in the right mesogastrium, and on laparotomy this proved to be an enlarged mesenteric gland. Needling produced thick pus from which *Bact. typhosum* was grown in pure culture. He points out that "purulent mesenteric glands due to typhoid—but often apparently unrelated to the disease—may be the cause of peritonitis (localised or diffuse), abdominal hæmorrhage, intestinal obstruction, or abdominal tumours of unknown origin." In the case he mentions, published with J. Cervenansky (in *Čas. čes. Lék.* 1936, **75**, 247), no history of typhoid or symptoms suggesting it could be elicited.

Society of Apothecaries of London

The court of assistants recently met under the chairmanship of Dr. J. P. Hedley, master of the society. An illuminated address was presented to Sir Stanley Woodwark on the completion of three years as master. Brigadier R. Ogier Ward took his seat as a member of the court; and a past master's medal was bestowed upon Mr. T. B. Layton. Dr. Hedley was re-elected as the society's representative on the General Medical Council, and Dr. W. D. Kirkwood on the Central Council for District Nursing in London. J. C. N. Wakeley was bound apprentice to C. P. G. Wakeley for four years. The following were admitted to the freedom of the society: by redemption, J. Bernstien, T. R. Hill, A. W. Kendall; and by servitude, A. W. Banks.

The following diplomas were granted upon examination:—

LMSSA.—M. J. Blunt, D. A. Cox, D. I. T. Edwards, E. D. C. Jones, R. A. Leeming, I. A. Nazroo, D. T. H. Paine, E. F. Roberts.

Master of Midwifery.—J. N. I. Emblin, A. Rothbaum, J. W. H. Simpson.

Surgeon Rear-Admiral C. P. G. Wakeley delivered a lecture in the hall on War Surgery in 1944, in place of Colonel Elliott Cutler, whose military duties prevented him from lecturing.

Nutrition Society

The conference on the nutritional rôle of the microflora in the alimentary tract, which the English group of the society was to have held last July, will now take place on Saturday, Dec. 30, beginning at 11 AM, at the London School of Hygiene, Keppel Street, WC1.

Electron Micrography

The scientific and technical group of the Royal Photographic Society and of the Association for Scientific Photography will meet at 3 PM today, Saturday, Nov. 25, at 16, Prince's Gate, London, SW7, to discuss this subject. The speakers are Mr. G. Parr, AMIEE, Mr. E. M. Crook, PH D, Miss F. M. L. Sheffield, D SC, Mr. L. V. Chilton, FRSP and Mr. D. G. Drummond, PH D.

Royal College of Physicians of Edinburgh

At a meeting held on Nov. 7, with Dr. A. Fergus Hewat, the president, in the chair, Dr. W. F. T. Haultain (Edinburgh) was elected to the fellowship.

Army Blood Transfusion Service

Brigadier L. E. H. Whitby will give a lecture on this subject at the Royal Society of Arts, John Adam Street, London, WC2, on Wednesday, Nov. 29, at 1.45 PM. Surgeon Rear-Admiral G. Gordon-Taylor will be in the chair.

Course on Mental Deficiency

The University of London extension and tutorial classes council, in coöperation with the Provisional National Council for Mental Health, will hold a course on mental deficiency and allied condition, provided sufficient applications are received, at the London School of Hygiene, Keppel Street, WC1, from March 12 to 23. Further information from Miss Evelyn Fox, c/o the University Extension Department, 39, Queen Anne Street, W1.

Royal Society of Medicine

At the section of odontology, on Monday, Nov. 27, at 4.30 PM, Dr. G. J. Parfitt will speak on bone pathology. At the section of medicine, on Nov. 28, at 4.30 PM, Prof. H. P. Himsworth will open a discussion on nutritional factors in liver disease. At the section of otology, on Dec. 1, at 10.30 AM, Mr. E. D. D. Davis, Mr. F. W. Watkyn-Thomas and Mr. T. E. Cawthorne will open a discussion on endocranial complications of otitic origin. At 2.30 PM, on the same day, the section of anæsthetics is holding a discussion on anæsthesia in the dental chair, when the speakers will be Dr. K. B. Pinson, Dr. F. W. Roberts and Dr. A. D. Marston. At the same hour, at the section of laryngology, Mr. Bedford Russell will speak on chronic frontal sinusitis, and Colonel Norton Canfield, USAMC, and Major Cane, USAMC, on the use of tantalum in plastic operations on the frontal bone.

British Orthopædic Association

A meeting of the association will be held in London on Dec. 15 and 16. On Friday, the 15th, at the Royal College of Surgeons, Lincoln's Inn Fields, WC2, at 9.15 AM, Mr. E. A. Nicoll will show the British Council film *Accident Service*. Afterwards Prof. W. E. Le Gros Clark will speak on the efficiency of intramuscular anastomosis and regeneration of devascularised muscles, and Dr. Ruth Bowden on changes in voluntary muscle after denervation and during re-innervation. Short papers will be read during the afternoon session, which begins at 2 PM. On Saturday, the 16th, the meeting will be continued at 10 AM at Queen Mary's Hospital, Roehampton, where Dr. A. J. Craft will demonstrate the standard limbs supplied by the Ministry of Pensions. Mr. F. G. St. Clair Strange will also speak on amputations and Colonel Rex Diveley, USAMC, will show a film entitled *Meet Mr. McConachie*.

The vitamin D in Cow and Gate Milk Food is being increased to 320 units per oz. Each ounce of the reconstituted milk will therefore contain 40 units of vitamin D.

THE *Deutsche medizinische Wochenschrift* is now suspended, and its place is being taken by a *Medizinische Zeitschrift*, which will also include *Medizinische Klinik*, *Medizinische Welt*, *Münchener medizinische Wochenschrift* and *Wiener medizinische Wochenschrift*.

Births, Marriages and Deaths

BIRTHS

EVANS.—On Nov. 17, at Hitchin, the wife of Squadron-Leader Byron Evans, MD, RAFVR—a son.

PORTER.—On Nov. 13, at Burnham-on-Crouch, the wife of Surgeon Lieut. D. S. Porter, RNVR—a daughter.

MARRIAGES

HOUSE—SHAW.—On Nov. 11, at Seal, Roger Allan House, MRCS, flight-lieutenant, RAFVR, to Jessie Mary Shaw, section-officer, WAAF.

DEATHS

KELLY.—On Nov. 16, at Liverpool, Sir Robert Kelly, CB, MD LPOOL, FRCS.

SEARS.—On Nov. 12, at Colyton, Devon, Charles Newton Sears, MD LOND., of Mullion, Cornwall, and late of London, SE12, aged 64.

SUCKLING.—On Nov. 16, Ernest Victor Suckling, MB, DPH, FRIC, FR SAN I., aged 51.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export.